

TAPR APRS Specification Discussion Mailing List Archive, October 1999 through December 2000

October 1999 through December 2000

TAPR's forum for documenting and refining the APRS protocol specification, including packet formats, position and object reports, messaging, telemetry, Mic-E, weather data, symbols, digipeating, Internet gateways, interoperability, and implementation questions.

This volume contains 15 original monthly files and 1,113 messages, arranged chronologically. The PDF is a readable access copy: MIME transfer encodings are decoded, HTML bodies are converted to plain text, and non-text attachments are represented by descriptive notes. The raw source text is supplied separately with the Internet Archive item.

Month	Messages	Original source file
1999-10	129	aprsspec.9910
1999-11	26	aprsspec.9911
1999-12	188	aprsspec.9912
2000-01	85	aprsspec.0001
2000-02	41	aprsspec.0002
2000-03	92	aprsspec.0003
2000-04	153	aprsspec.0004
2000-05	147	aprsspec.0005
2000-06	50	aprsspec.0006
2000-07	24	aprsspec.0007
2000-08	75	aprsspec.0008
2000-09	12	aprsspec.0009
2000-10	22	aprsspec.0010
2000-11	36	aprsspec.0011
2000-12	33	aprsspec.0012

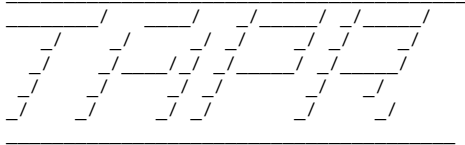
October 1999

Original source file: aprsspec.9910

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprsspec/mail_archive/aprsspec.9910

1. APRS Spec Discussion Welcome Message

From: Lyriss <lyriss@lists.tapr.org>
Date: Sat, 02 Oct 1999 11:56:32 -0500
To: wd5ivd@tapr.org
Message-ID: <LYR11594-42765-1999.10.02-11.56.32--wd5ivd@tapr.org@lists.tapr.org>
Rendered body type: text/plain



Welcome to the TAPR APRS(r) Spec Discussion list.
This is a sub-group of the TAPR APRS(r) SIG

The purpose of this list is to provide a forum for folks interested
in discussing topics related to the APRS Spec.

The List has a few simple rules:

- 1) Stick to the subject. That means no virus alerts, no chocolate chip cookie recipes, no surplus gear fire sales, no nothing that isn't directly related to this topic area.
- 2) No abusive behavior demonstrated towards a list member will be tolerated on this list. Please take your flames elsewhere.
- 3) The list chairperson reserve the right to unsubscribe any list member who violates these rules without warning. That means one strike and you're out of here.

The chairperson of the APRS Spec list is:

Stan Horzempa, WA1LOU
wallou@tapr.org
<http://www.tapr.org/~wallou>
One Glen Ave., Wolcott, CT 06716-1442

To post messages to the linux list, send email to:

aprsspec@lists.tapr.org

To unsubscribe from this mailing list, surf to:

<http://www.tapr.org/cgi-bin/lyriss.pl?enter=aprsspec>

or send email to:

lyriss@lists.tapr.org

with the following line in the body of the message:

unsub aprsspec

The host of this list is:

Tucson Amateur Packet Radio (TAPR)
tapr@tapr.org
<http://www.tapr.org>
8987-309 E Tanque Verde Rd. #337, Tucson, AZ 85749-9399,
phone 940-383-0000, fax 940-566-2544

Just so that you have all the commands neatly contained in one place, here is just about everything you will need to know. Note that this list is running on a Lyris server. Please be aware that the commands might be different from those that you are used to using on other list servers. (For more information on Lyris, see <<http://www.lyris.com/>>.)

1. First of all, almost everything that you might need to do on the server is most easily and effectively performed via Lyris's Web interface at <<http://www.tapr.org/cgi-bin/lyris.pl>>.
2. In case you do not have Web access, here are some key commands; in all cases, the default server address is: <lyris@lists.tapr.org>. Other addresses are shown where appropriate. Note that commands may be placed in either the subject line or in the body of the message:

SUBSCRIBING:

subscribe aprsspec your_name
join aprsspec your_name
alternate address: join-aprsspec@lists.tapr.org

UNSUBSCRIBING:

unsubscribe aprsepec
leave aprsspec
alternate address: leave-aprsspec@lists.tapr.org

SETTING MEMBERSHIP TO DIGEST MODE:

set aprsspec digest

SETTING MEMBERSHIP TO INDEX MODE:

set aprsspec index

SETTING MEMBERSHIP TO DISCUSSION MODE:

set aprsspec mail

TEMPORARILY SUSPENDING MAIL FROM THE LIST:

set aprsspec nomail

RESUMING MAIL FROM THE LIST:

(command depends on your preferred mode)

set aprsspec mail
set aprsspec digest
set aprsspec index

ACKNOWLEDGMENT:

set aprsspec ack
(sends you a confirmation message when your posts are sent)
set aprsspec noack
(no confirmation message when posts are distributed)

RECEIVING COPIES OF YOUR OWN POSTS:

set aprsspec repro
(receive copies of your own posts)
set aprsspec norepro
(do not receive copies of your own posts)

SETTING YOUR PASSWORD:

set aprsspec pw=mypassword
(where "mypassword" is the password you wish to set)

DETERMINING YOUR MEMBERSHIP SETTINGS:

query aprsspec

RETRIEVING THE CURRENT VERSION OF THIS DOCUMENT:

get aprsspec hello

MORE INFORMATION ON LYRIS'S COMMANDS:

help

POSTING TO THE LIST:

You must be a subscriber to post messages. Sending mail to this address will distribute it to all the members of the mailing list: aprsspec@lists.tapr.org

3. CHANGING YOUR SETTINGS/ADDRESS VIA THE WEB INTERFACE: To do this, go to <http://www.tapr.org/cgi-bin/lyris.pl> and click the link in the "Change Your Settings" section. You'll need to enter your e-mail address and password (if you chose one) to continue.

(If you've forgotten your password, you can type in your e-mail address in the field at the bottom of the page and click "Get password" to request Lyris to e-mail your password to you.)

At the following page, you can read messages, post a message, adjust your settings, or unsubscribe. From the settings page, you can change your status (MAIL, DIGEST, INDEX, or NOMAIL), choose whether or not to see your own messages, and choose whether or not you want to receive a separate acknowledgement via e-mail when one of your messages is posted to the list. You can also change your e-mail address if you need to. When you change your settings, make sure you click the "Save" button at the bottom of the page.

4. ARCHIVES: The aprsspec SIG archives are available on the Web, at the following URL: <http://www.tapr.org/sigf.html>
5. BOUNCED MAIL: One of the key features of Lyris is its ability to handle mail bounces transparently to the list owner; as such, bounced mail will be handled primarily by the Lyris list server.
6. POSTS/REPLIES FROM DIGEST USERS: You *must* change the Subject: line when replying to a digest; all posts with "aprsspec DIGEST" in the Subject: line will be rejected by the server (you will receive a "rejection letter" when this happens).

APRS(r) is registered to Bob Bruninga, WB4APR.

2. [aprsspec] APRS Spec Comments

From: Keith Sproul <ksproul@hardees.Rutgers.EDU>
Date: Sun, 3 Oct 1999 20:28:37 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43057-1999.10.03-19.40.14--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have made several replies/comments to the APRSSpec sig, but they have not been transmitted yet because of a change in my network connection. I don't want to retype them and my email should be back up tomorrow (Monday) so I am going to wait and let them be transmitted tomorrow night.

Overall, I am quite pleased with the nature and types of comments that have been posted. Several things were just oversites (mostly on my part) and a several were clarifications that made lots of sense..

This is all good and exactly what we were looking/hoping for..

The end result will be a good solid document to work from..

This is going better and smother than I was afraid it might, so I am quite pleased with the process..

As to what my network change is, MY T1 is -FINALLY-!!! up and running!!!! I have to wait for my DNS names to catch up with the new network numbers before our anti-spam system will allow my email from my home account to go out..

Keith Sproul

--

Keith Sproul	Ham Radio: WU2Z
Student Housing Network Coordinator	732 445-3695 Work 732 445-2968 Fax
Rutgers University Computing Services	732 821-4828 Home
http://dorm.rutgers.edu/~ksproul/	mailto://ksproul@noc.rutgers.edu

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3. [aprsspec] Clarification: "=" Fixed position with messaging capability

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sun, 3 Oct 1999 14:58:45 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11594-43033-1999.10.03-17.09.27--wd5ivd#tapir.org@lists.tapir.org>
Rendered body type: text/plain

Page 6:

Position packet types shows "@", "/" and "!". "=" is Fixed with computer, and is not directly specified.

Brent KH2Z

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4. [aprsspec] Clarification: Intended Audience of APRS protocol reference?

From: Jeff King <jeff@aerodata.net>
Date: Sun, 03 Oct 1999 16:51:03 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11594-43022-1999.10.03-16.02.24--wd5ivd#tapir.org@lists.tapir.org>
Rendered body type: text/plain

RE: APRS Protocol Reference version 1.0, draft

Who is the intended audience of the release version of this document?
Will it be only for existing APRS authors or as a guide for those that
may wish to write new APRS applications, be they display or tracking
units?

With regards to reviewing the document, this DOES make a difference.

Thanks

Jeff

You are currently subscribed to aprsspec as: wd5ivd@tapir.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapir.org

5. [aprsspec] Comment: Units

From: "Dale Huguley" <kg5qd@worldnet.att.net>
Date: Mon, 4 Oct 1999 11:42:50 -0000
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11594-43174-1999.10.04-06.59.13--wd5ivd#tapir.org@lists.tapir.org>
Rendered body type: text/plain

I was expecting some very basic definitions from the protocol which are not present-

Units should be defined..
(A moving object's speed should epressed in knots for example).
No where is there a mention of "... " meaning "missing or not parsed"
Is North 000 or 360 for a vector?
What is the maximum length of an on-the-air packet?
What is the end of line designator? (LF/CR or what)
I state again - all times should be in Zulu.

73 de kg5qd Dale

You are currently subscribed to aprsspec as: wd5ivd@tapir.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapir.org

6. [aprsspec] Comments on the Spec

From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Mon, 4 Oct 1999 12:40:58 +1000
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11594-43093-1999.10.03-21.50.56--wd5ivd#tapir.org@lists.tapir.org>
Rendered body type: text/plain

G'Day

One thing that I noticed was missing was DGPS being a legal destination. Given that DGPS also sent through UI, can we have it added to the list acceptable destinations. If there is a reason for it not being there, maybe include a footnote indicating why.

Also it would be good to include some information in this document on the MIC-E protocol.

The last page - The table... Is FANTASTIC!!!!

Overall good work. I will have a look at it some more this long weekend...

Darryl VK2TDS

Now to a comment by Hamish Moffatt VK3SB on the OzAPRS mailing list

This is a definite improvement on the documentation available to date. I think there is some clumsy wording and minor errors (eg the protocol is AX.25, not AX-25, datagram is one word, not data-gram or "data gram") which will lessen its impact.

I think the special TO callsigns system (APmxxx, m is manufacturer code) is a poor way to encode manufacturer information. Frankly I don't see the need to publish the manufacturer and version number at all, but especially not in the destination callsign. I would prefer that the destination callsign was a standard "APRS". I don't know what country has the "AP" prefix but I imagine they would have a pretty entertaining time using APRS there!

The spec says that MIC-E packages must be decoded by everyone, but fails to give any details or a reference to the MIC-E specification.

There's not a lot of rationale given in the document. I think this is important in any standard or policy document. For example it says that standalone trackers transmit to GPSxyz, where xyz is the icon. Two questions -- firstly, aren't icons a single character, not 3? and secondly, why the special callsign? My portable station is perfectly capable of sending to "APRS" like any other.

Unfortunately this is an attempt to document current practice; ideally all this could have been defined up front. IMHO there are far too many ways to report your position, which would make writing receiving software difficult to say the least. You have to parse grid squares, a lot of different POSIT formats, and then NMEA-0183 (GPS) sentences. I was pleasantly surprised to find that even javAPRS handles all these.

I suggest deprecating all destination callsigns except APRS (or perhaps all the AP* codes) immediately. It is too confusing and IMHO unnecessary to accept GPS*, SPC*, SYM*, a huge list of others, etc.

I am happy for this message to be forwarded around to anyone interested. Hope it is of some use.

73,
Hamish VK3SB

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You are currently subscribed to aprsspec as: wd5ivd@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

7. [aprsspec] Correction: Compressed format

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sun, 3 Oct 1999 15:05:39 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43036-1999.10.03-17.16.09--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Page 6:

The inclusion of compress format in the paragraph on packet types is confusing. Compressed format is part of one of the other packet types:

```
>From Page 6.
...!DDMM.hhn/DDMM.hhW$... Fixed format (digipeaters) no APRS
=DDMM.hhn/DDMM.hhW$... Fixed but is APRS message capable
/DDHMMzDDMM.hhn/DDMM.hhW$... Stationary, time of last fix
@DDHMMzDDMM.hhn/DDMM.hhW$CSE/SPD/... Moving (with APRS)
@DDHMMzDDMM.hhn/DDMM.hhW\CSE/SPD/BRG/NRQ/.... DF report
[XXnnyy].... Grid Square
[XXnn]... Grid Square
/YYYYXXX$cst Compressed format which can be used
                in place of LAT/LONG/cse/spd in all
                formats. /$ are the ICON bytes and T
                is a TYPE byte. See YYYNNNN.txt
```

This seems to imply that a compressed packet is /YYYYXXX\$cst. But it is really part of one of posits types.

```
Normal:   =DDMM.mmN/DDMM.mmW$PHGxxx...      (also works for !)
Comprssd: =/YYYYXXX$cst...
```

```
Normal:   @121234zDDHMMzDDMM.mmN/DDMM.mmW$CSE/SPD...
Comprssd: @121234z/YYYYXXX$cst...          (also works for /)
```

Brent Hildebrand, KH2Z

You are currently subscribed to aprsspec as: wd5ivd@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

8. [aprsspec] FUNDAMENTAL: What does APRS stand for?

From: Ian Wade <ian@dowrmain.demon.co.uk>
Date: Mon, 4 Oct 1999 21:57:56 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43265-1999.10.04-16.10.21--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

First, congratulations to everyone concerned in getting all of this information into one place. It's a very useful starting point.

I'm compiling a number of detailed comments, but right now I have just one fundamental comment:

The initials "APRS" have variously been described in different documents to mean:

- #1: "Automatic *Position* Reporting System" or
- #2: "Automatic *Packet* Reporting System"

The spec we're discussing presently calls it #1.

I submit that as APRS is capable of reporting *much* more than just positions, we rename the spec to #2; i.e APRS is a PACKET reporting system.

Irrespective of the original/current meanings adopted by various people, I feel this is now the ideal opportunity to give APRS the credit it deserves for the very wide range of uses it has. Calling it just a "position" reporting system is not relevant any more and doesn't do it justice.

My 0.02c

73

Ian, G3NRW

--

+-----+

```
| Editor: RSGB's RadCom "Data" column. |
| email: g3nrw@arrl.net |
| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
| |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

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9. [aprsspec] Intended Audience of APRS protocol reference?

From: Jeff King <jeff@aerodata.net>
Date: Sat, 02 Oct 1999 21:33:05 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-42861-1999.10.02-20.43.59--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

RE: APRS Protocol Reference version 1.0, draft

Who is the intended audience of the release version of this document?
Will it be only for existing APRS authors or as a guide for those that
may wish to write new APRS applications, be they display or tracking
units?

Thanks

Jeff

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To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

10. [aprsspec] Local Time

From: "Dale Huguley" <kg5qd@worldnet.att.net>
Date: Sun, 3 Oct 1999 11:23:03 -0000
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-42955-1999.10.03-06.39.33--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All- can anyone explain the use of "local time" in aprs. I cannot think
of a use that does not cause problems outside of a very limited
geographical area. Shouldn't all times be in zulu?

73 de kg5qd Dale

You are currently subscribed to aprsspec as: wd5ivd@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

11. [aprsspec] Minor omission- Page 3

From: Jeff King <jeff@aerodata.net>
Date: Sat, 02 Oct 1999 22:07:26 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-42867-1999.10.02-21.18.27--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At the top of page 3, under Reserved DESTINATIONS, nothing
exists for XASTIR, a released Linux based APRS display application
written by Frank Giannandrea. (I am assuming the X-APRS designator
was for the Sproul's Linux application, currently in Beta).

-Jeff

You are currently subscribed to aprsspec as: wd5ivd@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

12. [aprsspec] Mostly Formatting/Clarification comments to Spec. Document

From: Darrell Hale <halehome@home.com>
Date: Sun, 03 Oct 1999 03:05:52 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11594-42943-1999.10.03-02.16.00--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just finished reviewing the Draft 1.0 Specification. I also just joined the discussion list tonight, so some of this may be repeating earlier comments I have not seen.

Here are some suggestions to help make the document more readable based on previous experience I have had with similar documents:

1) Examples on pages 4 and 5 can be changed to eliminate possible confusion:

CURRENT:

121234/ is local time 1234 on the 12th
121234z is zulu time 1234 on the 12th
WIDE:>121234zStatus

REVISION:

271234/ is local time 1234 on the 27th
271234z is zulu time 1234 on the 27th
WIDE:>271234zStatus

This eliminates the double use of "12" in two different field definitions.

2) On page 6, Position Report:

Add the = symbol to the list of position reports.

Move the indented @ lines from the list of types to the next grouping of lines, or better yet make them into a third grouping of examples.

Correct (if required) the "Stationary" label to "Moving" for the line 3 "/DDMM" reference.

CURRENT:

```
! Stationary Posit or Ultimeater 2000
/ Moving Position report
@ Moving Position report with time
  @280817/3610.19N/08414.99W-ccc/sss
  @151909z/4011.58N/07942.35Wv000/000/-300-<132>

...!DDMM.hhN/DDMM.hhW$... Fixed format (digipeaters) no APRS
=DDMM.hhN/DDMM.hhW$... Fixed but is APRS message capable
/DDHHMMzDDMM.hhN/DDMM.hhW$... Stationary, time of last fix
@DDHHMMzDDMM.hhN/DDMM.hhW$CSE/SPD/... Moving (with APRS)
@DDHHMMzDDMM.hhN/DDMM.hhW\CSE/SPD/BRG/NRQ/.... DF report
[XXnnyy].... Grid Square
[XXnn]... Grid Square
/YYYYXXXX$cst Compressed format which can be used
```

REVISION:

```
! Stationary Posit or Ultimeater 2000
= Posit (APRS Capable)
/ Moving Position report
@ Moving Position report with time

...!DDMM.hhN/DDMM.hhW$... Fixed format (digipeaters) no APRS
=DDMM.hhN/DDMM.hhW$... Fixed but is APRS message capable
/DDHHMMzDDMM.hhN/DDMM.hhW$... Moving, time of last fix
@DDHHMMzDDMM.hhN/DDMM.hhW$CSE/SPD/... Moving (with APRS)
@DDHHMMzDDMM.hhN/DDMM.hhW\CSE/SPD/BRG/NRQ/.... DF report
[XXnnyy].... Grid Square
[XXnn]... Grid Square
/YYYYXXXX$cst Compressed format which can be used
```

Examples:

```
@280817/3610.19N/08414.99W-ccc/sss    ... Give Explanation
@151909z/4011.58N/07942.35Wv000/000/-300-<132>    ... Give Explanation
/271234z3507.46N/07543.62W$    ... Give Explanation
```

I assume that it is saying that the data format following the ! is "fixed" in the usual !DDMM... format, but it is allowed to start anywhere within the first 40 characters of the data message. I assume it is not a FIXED position report (ie: non-moving).

Include ranges and units of the data fields. I am guessing here, but CSE is in degrees over the range of 000 to 359, and that SPD is in Miles/Hour over the range of 000 to 999?

Include an example of each. For example 270/055 would be due west at 55 MPH, and PHG1234 is 1 watt, 40 feet, 3 dB, and 180 directivity.

CURRENT:

```
!DDMM.mmN/DDMM.mmW#PHG5360/WIDE... (identifying comments)...
| | | | | | _____ makes station show up green
| | | | | | _____ Omni (Direction of max gain)
| | | | | | _____ Ant gain in dB
| | | | | | _____ Height = log2(HAAT/10)
LAT LONG | | | | _____ Power = SQR(P)
| | | | | | _____ Power-Height-Gain identifier *
| | | | | | _____ # is symbol for digipeater
```

```
!DDMM.mmN/DDDMM.mmmW#PHG5360/WIDE... (identifying comments)...
| | | | | | Makes station show up green
| | | | | Direction of max gain (Omni)
| | | | Ant gain in dB (6 dB)
| | Height = log2(HAAT/10) (80 feet)
LAT LONG | | Power = SQR(P) (25 Watts)
| | PHG = Power-Height-Gain identifier
| # = symbol for digipeater
```

CURRENT:

REVISÉ:

```
0 = 10 feet
9 = 5120 feet
: = ???? feet
A = ???? feet
```

Page 10

doubling progression vice a log function. If so, then the table above would be:

```
0 =      10 feet
9 =    5,120 feet
: =    10,240 feet
A = 1,310,720 feet
```

Is this a doubling function, or a log function? Are different people calculating their heights in different ways?

8) Page 7, Height value calculation:

It is stated that

```
H = ASCII(Hchar)-51 converts it to a decimal value
```

will produce the numeric value of the height character. If the numeral 0 is ASCII 48, then to correctly calculate this number shouldn't the formula be:

```
H = ASCII(Hchar)-48 converts it to a decimal value
```

```
or, H = ASCII(0)-48 = 48-48 = 0
and, H = ASCII(5)-48 = 53-48 = 5
```

9) Page 9 states that

"The call of the station sending the object should be attached to the object"
and "All receiving software must attach to the object the call of the sending station".

How is this done?

10) Page 9, indicating spaces:

In the OBJECTS definition, there are supposed to be a fixed 9 character object name. The format is then shown as:

```
;OBJECT__*DDHHMMzDDMM.....
```

For this examples (as well as others) the _ character is difficult to count as an individual character. Something like the following would probably better reinforce the character count:

```
;OBJECTnam*DDHHMMzDDMM.....
or ;OBJECTsss*DDHHMMzDDMM.....
```

Where s is noted to indicate a space (either immediately following the definition, or as a general definition listed earlier in the document).

Other examples:

```
:W3XYZ____:one line message text.....{345 (the {345 is the line#)
```

becomes

```
:W3XYZssss:one line message text.....{345 (the {345 is the line#)
      (where s = a space)
```

11) Page 11, ACK Message:

Standardise the case of the ACK in the discussion (Capitalizing it for effect could be mis-interpreted since the lower-case note is stated elsewhere, and therefore may not have been read or forgotten. Otherwise, reinforce the reminder.

CURRENT:

An ACK is just a message with the letters ACK# where the # is the message line number (following the { character at the end of the line).

REVISION 1:

An ACKnowledge is just a message _PROCEEDED_ with the letters ack# where the # is the message line number (following the { character at the end of the line).

or REVISION 2:

An ACK is just a message _PROCEEDED_ with the letters ACK# ("ack" in lower case) where the # is the message line number (following the { character at the end of the line).

12) And to echo the sentiment

>On page 6, at the bottom of the segment "Position Report"
>the referenced file, YYYYNNNN.txt (the compressed format as
>used on APRSDos, the Kenwood HT and APRSDIGI) is not included.

Although this reference probably stands on it's own merits, this and any other referenced documents (such as the NMEA-0183 reference) could be included on the web page along with the specification so that they may be more easily referenced.

Thank You,

Darrell Hale, N3KTP

You are currently subscribed to aprsspec as: wd5ivd@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

13. [aprsspec] Omission - MIM telemetry

From: Jeff King <jeff@aerodata.net>
Date: Sun, 03 Oct 1999 00:07:00 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-42891-1999.10.02-23.18.31--wd5ivd@tapr.org@lists.tapr.org>
Rendered body type: text/plain

The MIM telemetry definition was omitted. Also, its not clear to me if MIM status and POSITS are the same as standard APRS, if different they need to be defined. I have attached all I have on the telemetry mode (from Bob).

TELEMETRY.TXT APRS TELEMETRY SYSTEM
=====

Document version: 8.3.8
Document dated: 27 Mar 99
Author(s): Bob Bruninga, WB4APR <bruninga@nadn.navy.mil>
ABSTRACT
TELEMETRY.TXT: Using the Micro Interface Module (MIM) for APRS telemetry.
 The MIM module is a complete telemetry TNC on a chip.

~~~~~

See Mic-E.txt      for how the MIM chip is used in the APRS Mic-Encoder  
See Mic-Lite.txt for how to make the MIM into a simple Mic-E

The MIM module is a complete telemetry TNC transmitter on a chip. It has a serial data port, 5 analog and 8 digital telemetry inputs. It outputs PTT and transmit audio AX.25 tones. The MIM was developed by Dr. Carl Wick, N3MIM, as a simple, light-weight, throw-away module for experimental balloons. WB4APR modified it for Mic-E operation and Dr. Will Clement refined it into a commercial product. It is now sold by APRS Engineering LLC at the address below. The only external components besides the sensors themselves, are a transmitter and optional GPS and battery.

EXTENDED LIFE: For extended operation (up to a year or more), the MIM can be turned on/off with an external timer between reports. A single set of AA Alkaline batteries could power the MIM and 1 watt transmitter for a YEAR at one report every 30 minutes.

| MODULE | INPUTS                     | OUTPUTS            |
|--------|----------------------------|--------------------|
|        | Analog 1 --0               | 0--> PTT to XMTR   |
|        | Analog 2 --0               | 0--> Audio to XMTR |
|        | Analog 3 --0               | 0                  |
|        | Analog 4 --0     M.I.M     | 0<-- Rcvr Audio    |
|        | Analog 5 --0               | 0<-- GPS NMEA data |
|        | Input bit 1 --0  Telemetry | 0                  |
|        | input bit 2 --0            | 0                  |

```

input bit 3 --0| Module |0
input bit 4 --0|         |0
input bit 5 --0|         |0
input bit 6 --0|         |0
input bit 7 --0|         |0
input bit 8 --0|         |0
-----

```

MIM PACKETS: The mim can operate in either MIM mode or MIC mode. Here are the packets in each mode:

```

MIM MODE:  STATUS  packet transmitted every N seconds
           POSIT   packet transmitted every P seconds
           TELMETRY packet transmitted every T seconds
           CWID    transmitted every C seconds

Mic MODE:  POSIT   packet every P seconds
           STATUS  text appended to posit every P/S seconds
           TELM    telemetry appended every P/T seconds

```

MIM TELEMETRY: Each telemetry value is a decimal number between 000 and 255. The user can adjust his sensors to meaningful values, or the telemetry equations can be modified on receipt. The on-air packet telemetry format is as follows:

```

T#sss,111,222,333,444,555,xxxxxxx  where sss is the serial number
                                     followed by the five 3 digit analog
                                     values and the eight binary values.

```

BATTERY VOLTAGE: Just a simple 10k and 2.4k resistor divider connected to channel 1 will give you a battery voltage reading in tenths of a volt. Thus, a reading of 138 would mean 13.8 volts. For precision, you might want to replace the 2.4K resistor with a pot to tweak the reading to an exact calibration.

TEMPERATURE MEASUREMENTS: Similarly, by proper selection of 2 resistor values and 2 diode voltage drops, you can easily make one of the Digi-Key \$2 thermistors read out temperature in degrees F. For details, run the MIC-TEMP.BAS program. It draws the schematic and allows you to select the proper resistor values. It is suggested that AD-2 be used for internal temperature just for consistency with the default APRS Telemetry Display.

TELEMETRY EQUATIONS: The real beauty of the APRS telemetry system is that you are not limited to specific calibrations as used above. APRS can display any other telemetry values according to any specific quadratic telemetry equation. For the ultimate in flexibility, APRS can receive on-air packets to define the Telemetry labels, units, and equations. Thus it does not need to be programmed for each application. These parameters may be transmitted to all APRS stations live via four one-line BULLETINS. The first one defines the telemetry labels, the second defines the units, the third defines the telemetry equations, and the forth defines the project name and digital bit definitions.

LIST-TELEMETRY. To see telemetry data in APRSdos, hit the LIST-TELEMETRY command. Hitting this command causes APRS to scan the TRAFFIC page looking for telemetry equations, and then to scan the LIST-LOG page for any TELEMETRY values. The TELEMETRY samples are saved in the normal LOG files. A sketch of the APRS telemetry display is shown below:

#### APRS TELEMETRY FOR XYZ BALLOON LAUNCH

| SER<br>NUM | TIME | Battery<br>volts | AirTemp<br>deg.F | BTtemp<br>deg.F | Pres<br>Mbars | Altud<br>K ft | Camra<br>BIT | Par<br>BIT | Sun<br>BIT | 10m<br>BIT | ATV<br>BIT | 5th<br>BIT | 6th... |
|------------|------|------------------|------------------|-----------------|---------------|---------------|--------------|------------|------------|------------|------------|------------|--------|
| 101        | 1215 | 12.8             | 86               | 85              | 999           | 0             | ...          | ...        | ...        | ...        | ...        | ...        | ...    |
| 104        | 1218 | 12.4             | 84               | 80              | 980           | 4000          | clik         | ...        | on         | on         | hi         | ...        | ...    |
| 105        | 1219 | 12.3             | 80               | 76              | 900           | 8000          | ...          | ...        | ...        | on         | hi         | ...        | ...    |
| 106        | 1220 | 12.1             | 75               | 70              | 850           | 16000         | ...          | ...        | on         | on         | ...        | ...        | ...    |
| 107        | 1221 | 12.0             | 70               | 65              | 800           | 32000         | clik         | ...        | ...        | ...        | ...        | ...        | ...    |
| 108        | 1222 | 12.0             | 65               | 60              | 730           | 64000         | ...          | ...        | on         | ...        | hi         | ...        | ...    |

To configure all APRS stations to properly decode the telemetry from a M.I.M module, one station transmits the proper parameter definition packets TO the CALLSIGN of the M.I.M module. For example of N3MIM's MIM:

To N3MIM:PARAM.Battery,BTemp,AirTemp,Pres,Altude,Camra,Chute,Sun,10m,ATV

To N3MIM:UNIT.Volts,deg.F,deg.F,Mbar,Kfeet,Clik,OPEN!,on,on,high  
To N3MIM:EQNS.0,2.6,0,0,.53,-32,3,4.39,49,-32,3,18,1,2,3  
To N3MIM:BITS.10110101,PROJECT TITLE...

The PARM format specifies the name of each of the 13 parameters.  
The UNIT format specifies what units are to be displayed, and what label is associated with the digital condition.  
The BITS format specifies whether a 1 or 0 indicates the indicated label and also the project Title.  
The EQNS format has three coefficients for each of the five analog channels.

Final value =  $A \cdot X^2 + B \cdot X + C$  Where X is the M.I.M transmitted value

FORMAL SPECIFICATION: The specific format for the TITLE, PARM, UNIT, and EQNS message packets are shown below. They are entered as messages to the address of the MIM module:

|                                     |                                                                                                                                                     |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| PARM.P1,P2,P3,P4,P5,B1,B2,B3,etc    | Where Pn and Bn are the parameter names                                                                                                             |
| UNIT,U1,U2,U3,U4,U5,L1,L2,L3,etc    | Where Un are the units for analog ports and Ln are the labels for the bits                                                                          |
| EQNS,A1,B1,C1,A2,B2,C2,A3,B3,C3,etc | Where the An,Bn,Cn are the coefficients for each of the five analog channels,                                                                       |
| BITS.XXXXXXXX,Title-up-to-23-chars  | The x's specify the state of the bits that match the BIT Labels.                                                                                    |
| T#sss,111,222,333,444,555,xxxxxxx   | This is the on-air format for the UI packet, where sss is the serial number followed by the five 3 digit analog values and the eight binary values. |

PARAMETER NAMES: Due to the 80 character screen width in DOS, each parameter has a fixed NAME/UNITS length. The lengths for the 5 analog channels are 7, 6, 5, 5 and 4 characters. The lengths for the 8 digital bits are 5, 4, 3, 3, 3, 2, 2, and 2 characters respectively. So you may need to decide early on what channel to use for what purpose based on the number of characters available in the display...

DEFAULTS TO APRS Mic-ENCODER: Since the predominant application of the MIM module is in the APRS Mic-Encoder, the default telemetry parameters and units for the Mic-E are normally displayed. These will go away if any on-air parameters or equations are received...

#### APPLICATIONS:

- 1) Balloon payloads using only party balloons (not big ones)
- 2) Tracking wildlife or packages
- 3) Small stand-alone trackers
- 4) Model Aircraft
- 5) Keeping track of your kids.

LOW POWER TELEMETRY TRANSMITTERS: To complement this less than ONE-CUBIC inch MIM telemetry system, Agrelo Engineering in NY makes a 1.5 x 0.5 x 0.25 inch 2 meter transmitter for \$99. It outputs 500 mW at 6 volts 140 ma and 120 mW at 3 volts 50 ma. A new 800 mw model is now out! See more cheap transmitters in the GPS.TXT file.

#### ORDERING YOUR MIM:

Order the MIM from APRS Engineering LLC, 115 Old Farm Ct, Glen Burnie MD, 21060

---

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---

## 14. [aprsspec] Omission - Page 6, compressed format

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 02 Oct 1999 23:48:25 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-42887-1999.10.02-22.59.18--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On page 6, at the bottom of the segment "Position Report" the referenced file, YYYNNNN.txt (the compressed format as used on APRSdos, the Kenwood HT and APRSDIGI) is not included.

---

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---

## 15. [aprsspec] Omission - Page 8

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 02 Oct 1999 23:56:45 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-42889-1999.10.02-23.07.40--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The MIC-E protocol is not defined sufficiently for a programmer to implement it, either on page 8 or on page 17. As the MIC-E protocol can be somewhat confusing, I would recommend adding a reference to it such as: <http://www.tapr.org/tapr/html/mic-e-proto.html>

---

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---

## 16. [aprsspec] Omission: Internet APRS protocol specification

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 03 Oct 1999 17:39:13 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43026-1999.10.03-16.51.03--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Type of report: OMISSION:  
Summary: Internet APRS protocol specification omitted  
DATE: October 3, 1999  
Submitted by: Jeff King wb8wka, jeff@aerodata.net

Detail of problem:

In the file Announcement2.pdf it states on Page 3, under the heading "Protocol Committee" in the first paragraph:

"The APRS Protocol Specification is the formal definition of the data elements and message formats used to communicate between APRS devices via wireless or wired (e.g., Internet) connections. It does not include user interface of other elements that do not affect the content or format of these interface components."

On Page 3, third paragraph it states:

"The Protocol Committee intends to publish Version 1.0 of the APRS Protocol Specification by the end of October 1999. The first draft of the Specification will be made available to the amateur community by the end of June 1999, and comment will be accepted as defined below"

Understand the slipped dates, however paragraph one and three clearly state the internet protocols (e.g.. APRSSERVE) are to be part of this document.

Hence, I am alerting you to there omission from the first draft.

---

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---

## 17. [aprsspec] Protocol process

From: John Ackermann <jra@febo.com>  
Date: Sun, 03 Oct 1999 13:30:43 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-42992-1999.10.03-12.42.21--wd5ivd#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Hi Guys --

There've been a couple of postings asking how we're going to handle comments on the protocol draft.

The automated mechanism for handling comments or request changes for the APRS protocol isn't developed yet. In the meantime, the aprsspec mailing list will have to do most of the work, with some help from me.

Here's what I intend to do, but I need to put a disclaimer out first. I'm going to be having surgery on Tuesday (Oct. 5) to remove a couple of blown-out disks in my neck, and have the associated vertebrae fused. Doctor's orders are that for the first two to three weeks after the surgery, I'm to spend no more than 15 minutes at a time at the computer, and that only a couple of times per day (and work-related stuff has to come first). So for the next few weeks, don't expect to see much from me.

That said:

1. The public comment period for the draft 1.0 spec will continue until November 1, 1999. By November 7, 1999, the WG will publish an anticipated date for publication of the final document for APRS Protocol Specification Version 1.0.
2. Although the developers are already subscribed to the list and see all the messages, I will keep a separate archive of those messages for future reference.
3. To make my life easier, please begin the "Subject" line of any message that is intended to be a formal comment with "Comment:", "Error:", "Omission:" or something similar, so I can filter submissions from normal traffic.
4. I will maintain a simple database of submissions, including the submitter's name, date submitted, brief description, and disposition. The "disposition" will be based on the vote (or more likely consensus view) of the Working Group members, and will probably be something like "accepted", "accepted in part", "rejected", "deferred", or "further info requested" (but don't hold me to those precise terms). The disposition field may not be filled in until after the end of the comment period (in other words, not every submission is going to be acted upon immediately after it is sent, though some might be).
5. I will upload the submission database to the Working Group web page, and do my best to update it regularly. I will also post it, and updates, to the aprsspec mailing list. Given my situation, it's likely that nothing will be posted anywhere until the latter part of October. Sorry about that...

73,  
John N8UR  
APRS Working Group Administrative Chair  
jra@febo.com

---

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---

## 18. [aprsspec] RE: Clarification: Compressed format

From: Bill Diaz <billdiaz@megsinet.net>  
Date: Sun, 03 Oct 1999 18:36:58 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43051-1999.10.03-18.50.07--wd5ivd@tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Brent,

The information presented on this subject to date does nothing to clarify how the compression formatted message can be encoded and decoded.  
Can you provide more info?

Bill KC9XG

-----Original Message-----  
From: Brent Hildebrand [SMTP:bhildebrand@earthlink.net]



Sent: Sunday, October 03, 1999 5:06 PM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Correction: Compressed format

Page 6:

The inclusion of compress format in the paragraph on packet types is confusing. Compressed format is part of one of the other packet types:

```
>From Page 6.
...!DDMM.hhN/DDDMM.hhW$... Fixed format (digipeaters) no APRS
=DDMM.hhN/DDDMM.hhW$... Fixed but is APRS message capable
/DDHHMMzDDMM.hhN/DDDMM.hhW$... Stationary, time of last fix
@DDHHMMzDDMM.hhN/DDDMM.hhW$CSE/SPD/... Moving (with APRS)
@DDHHMMzDDMM.hhN/DDDMM.hhW\CSE/SPD/BRG/NRQ/.... DF report
[XXnnyy].... Grid Square
[XXnn]... Grid Square
/YYYYXXX$cst Compressed format which can be used
                in place of LAT/LONG/cse/spd in all
                formats. /$ are the ICON bytes and T
                is a TYPE byte. See YYYNNNN.txt
```

This seems to imply that a compressed packet is /YYYYXXX\$cst. But it is really part of one of posits types.

```
Normal:   =DDMM.mmN/DDDMM.mmW$PHGxxxx....      (also works for !)
Comprsd:  =/YYYYXXX$cst...
```

```
Normal:   @121234zDDHHMMzDDMM.mmN/DDDMM.mmW$CSE/SPD...
Comprsd:  @121234z/YYYYXXX$cst...              (also works for /)
```

Brent Hildebrand, KH2Z

---

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---

## 19. [aprsspec] RE: Clarification: Compressed format

```
From: Jeff King <jeff@aerodata.net>
Date: Sun, 03 Oct 1999 20:21:45 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43056-1999.10.03-19.33.46--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Bill:

The reason you and Brett are having such trouble with this, is the document describing the compressed format is missing. This would be the yyyxxxx.txt document that is referenced, also referred to as the compressed format.

I've never seen it on any official APRS site or on the TAPR site. I have however seen in on the ARPP file list area. See:  
[http://www.onelist.com/files/arpp/rough\\_APRS\\_protocol/compressed\\_format.txt](http://www.onelist.com/files/arpp/rough_APRS_protocol/compressed_format.txt)

Note I have no idea if this is it..... this should still be treated as an omission until someone from the WG provides the file as they are the only definitive source.

73

Jeff

Bill Diaz wrote:

```
> Brent,
>
> The information presented on this subject to date does nothing to clarify how
> the compression formatted message can be encoded and decoded.
> Can you provide more info?
>
> Bill KC9XG
```

```

>
> -----Original Message-----
> From: Brent Hildebrand [SMTP:bhildebrand@earthlink.net]
> Sent: Sunday, October 03, 1999 5:06 PM
> To: APRS Spec Discussion List
> Subject: [aprsspec] Correction: Compressed format
>
> Page 6:
>
> The inclusion of compress format in the paragraph on packet types is
> confusing. Compressed format is part of one of the other packet types:
>
> >From Page 6.
> ...!DDMM.hhN/DDMM.hhW$... Fixed format (digipeaters) no APRS
> =DDMM.hhN/DDMM.hhW$... Fixed but is APRS message capable
> /DDHHMMzDDMM.hhN/DDMM.hhW$... Stationary, time of last fix
> @DDHHMMzDDMM.hhN/DDMM.hhW$CSE/SPD/... Moving (with APRS)
> @DDHHMMzDDMM.hhN/DDMM.hhW\CSE/SPD/BRG/NRQ/.... DF report
> [XXnnyy].... Grid Square
> [XXnn]... Grid Square
> /YYYYXXX$csT Compressed format which can be used
> in place of LAT/LONG/cse/spd in all
> formats. /$ are the ICON bytes and T
> is a TYPE byte. See YYYNNNN.txt
>
> This seems to imply that a compressed packet is /YYYYXXX$csT. But it is
> really part of one of posits types.
>
> Normal: =DDMM.mmN/DDMM.mmW$PHGxxxx... (also works for !)
> Comprssd: =/YYYYXXX$csT...
>
> Normal: @121234zDDHHMMzDDMM.mmN/DDMM.mmW$CSE/SPD...
> Comprssd: @121234z/YYYYXXX$csT... (also works for /)
>
> Brent Hildebrand, KH2Z
>
> ---
> You are currently subscribed to aprsspec as: jeff@aerodata.net
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

```

---

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To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

## 20. [aprsspec] Re: FUNDAMENTAL: What does APRS stand for?

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 4 Oct 1999 17:21:58 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43272-1999.10.04-16.33.50--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

I think I'm ready to go back to the "PACKET" name. I changed it to POSITION when GPS became so popular, but it really was "PACKET" in the early days.

So I say YES. PACKET.

de WB4APR, Bob

On Mon, 4 Oct 1999, Ian Wade wrote:

```

> First, congratulations to everyone concerned in getting all of this
> information into one place. It's a very useful starting point.
>
> I'm compiling a number of detailed comments, but right now I have just
> one fundamental comment:
>
> The initials "APRS" have variously been described in different documents
> to mean:
>
> #1: "Automatic *Position* Reporting System" or
> #2: "Automatic *Packet* Reporting System"
>
> The spec we're discussing presently calls it #1.
>

```

```

> I submit that as APRS is capable of reporting *much* more than just
> positions, we rename the spec to #2; i.e APRS is a PACKET reporting
> system.
>
> Irrespective of the original/current meanings adopted by various people,
> I feel this is now the ideal opportunity to give APRS the credit it
> deserves for the very wide range of uses it has. Calling it just a
> "position" reporting system is not relevant any more and doesn't do it
> justice.
>
> My 0.02c
>
> 73
> Ian, G3NRW
> --
> +-----+
> | Editor: RSGB's RadCom "Data" column. |
> | email: g3nrw@arrl.net |
> | AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
> | |
> | INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
> +-----+
>
> ---
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org
>
>

```

APRSdos REPLY/COMMENT:

```

Reply mail addr:  wb4apr@amsat.org
US mail address:  115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html
See Maryland APRS LIVE: http://web.usna.navy.mil/~bruninga/aprs.html
See GPS on ANY radio: http://www.tapr.org/tapr/html/mic-e.html

```

```

---
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To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

```

## 21. [aprsspec] Re: Local Time

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 4 Oct 1999 08:47:57 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43179-1999.10.04-07.59.34--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

```

> Hi All- can anyone explain the use of "local time" in aprs. I cannot
> think of a use that does not cause problems outside of a very limited
> geographical area. Shouldn't all times be in zulu?

```

APRS was designed for tactical-real-time support for emergency and special event operations... usually local. The fact that we use it 99.9% of the time for wide area general ham radio, 24 hours a day is just its "standby" mode to keep us all trained and familiar with its operation.

During the protocol discussions to follow, I hope we don't lose sight of the fundamental local/real-time urgent (but very rare) design objectives.

We frequently use paths of 4 hops or more just to make sure there is enough activity in most areas to make APRS interesting most of the time. But as emergencies and special events occur, the first thing to do, is cut back to the area of need. APRS can support about 100 users. During benign conditions, this may take one or two states to see that many users. But during an emergency or local event, as more and more stations participate, then the paths will have to be shorter to avoid overload...

de WB4APR, Bob

```

---
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```

---

## 22. [aprrspec] Re: Local Time

From: "Sadowski, Allan" <allan.sadowski@ncshp.org>  
Date: Mon, 4 Oct 1999 09:06:22 -0400  
To: "APRS Spec Discussion List" <aprrspec@lists.tapir.org>  
Message-ID: <LYR11594-43180-1999.10.04-08.15.31--wd5ivd#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Pardon my ignorance if this is addressed already... not meant to  
flame or place any other comments in a poor light...

Given emergencies aren't likely to make an effort to impact only one  
time zone... and given this is something the military has had extensive  
experience in.... I suggest that APRS either adhere to ZULU... or if  
local time is a necessity... that a field be defined with a single character  
that refers to the local time zone...

Confusion will reign if either we aren't all on the same time standard..  
or that we don't explicitly state our time reference... history proves  
this over and over and over...

TNX  
AH6LS

> > Hi All- can anyone explain the use of "local time" in aprs. I cannot  
> > think of a use that does not cause problems outside of a very limited  
> > geographical area. Shouldn't all times be in zulu?  
>  
> APRS was designed for tactical-real-time support for emergency and special  
> event operations... ususally local.  
    snip  
> During the protocol discussions to follow, I hope we dont lose sight of  
> the fundamental local/real-time urgent (but very rare) design objectives.  
>  
>

---

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---

## 23. [aprrspec] Re: Local Time

From: Tim Salo <salo@networkcs.com>  
Date: Mon, 4 Oct 1999 08:17:41 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprrspec@lists.tapir.org>  
Message-ID: <LYR11594-43183-1999.10.04-08.29.18--wd5ivd#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

> From: "Dale Huguley" <kg5qd@worldnet.att.net>  
> Subject: [aprrspec] Local Time  
> Date: Sun, 3 Oct 1999 11:23:03 -0000  
> [...]  
> Shouldn't all times be in zulu?

Given that this is amateur radio, not the military, I believe that the  
term "UTC" would be more appropriate for the specification. See, for  
example, "The ARRL Operating Manual."

-tjs

---

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---

## 24. [aprrspec] Re: Local Time

From: "Ed Palmer" <PalmerEd@email.msn.com>  
Date: Mon, 4 Oct 1999 08:41:58 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapir.org>  
Message-ID: <LYR11594-43193-1999.10.04-08.52.37--wd5ivd#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

From: Sadowski, Allan <allan.sadowski@ncshp.org>  
> Given emergencies aren't likely to make an effort to impact only one  
> time zone... and given this is something the military has had extensive  
> experience in.... I suggest that APRS either adhere to ZULU... or if  
> local time is a necessity... that a field be defined with a single  
character  
> that refers to the local time zone...  
>  
> Confusion will reign if either we aren't all on the same time standard..

> or that we don't explicitly state our time reference... history proves  
> this over and over and over...

I agree with Allan's general sentiment that UTC be used unless local is a necessity. Being close to the boundary between Central and Eastern time, I see far too much confusion possible unless "local" is properly defined.

Since, as I understand it, this document is currently defining the APRS protocol as it exists in current implementations, establishing a way of designating the local time zone needs to be deferred until post V1.0. That being said, I don't think a single character is the way to go. After all, we have a well-defined standard for time zone abbreviations which covers the world; that should be used or "confusion will reign" even more. There are already far too many "special cases" in this protocol spec, IMHO.

On a related point, the second line starting with "@" on page 6 ("@280817/3610.19N/08414.99W-ccc/sss") is missing the time zone character, and should start either "@280817Z" or "@280817/" to be correct.

--Ed  
-----  
Ed Palmer, KU4LY  
Navarre, FL  
ku4ly@arrl.net

---  
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---

## 25. [aprsspec] Re: Local Time

From: Tim Salo <salo@networkcs.com>  
Date: Mon, 4 Oct 1999 08:53:08 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43198-1999.10.04-09.04.45--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: "Dale Huguley" <kg5qd@worldnet.att.net>  
> To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
> Subject: [aprsspec] Local Time  
> Date: Sun, 3 Oct 1999 11:23:03 -0000  
>  
> Hi All- can anyone explain the use of "local time" in aprs. I cannot think  
> of a use that does not cause problems outside of a very limited  
> geographical area. Shouldn't all times be in zulu?

I believe that the \_protocol\_ should use UTC and that the use of or translation to local time should be left to the user interface.

I also believe that the protocol specification should indicate that UTC is preferred, and that the use of local time \_in the protocol\_ is deprecated, (specification language for: "we did this in the past, but we figured out that it is a bad idea; you should be able to receive it, but you shouldn't transmit it").

-tjs

---  
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---

## 26. [aprsspec] Re: Local Time

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 4 Oct 1999 10:33:52 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43204-1999.10.04-09.45.43--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Sorry, I may have confused things. The authors have all agreed that only ZULU will be used on the air. All current versions adhere to that standard.

But local display in local time is an option. So I guess you are correct, that there is no need for a "format" for local time... since we will not transmit it on the air that way...

de WB4APR, Bob

On Mon, 4 Oct 1999, Sadowski, Allan wrote:

```
> Pardon my ignorance if this is addressed already.... not meant to
> flame or place any other comments in a poor light...
>
> Given emergencies aren't likely to make an effort to impact only one
> time zone... and given this is something the military has had extensive
> experience in.... I suggest that APRS either adhere to ZULU... or if
> local time is a necessity... that a field be defined with a single character
> that refers to the local time zone...
>
> Confusion will reign if either we aren't all on the same time standard..
> or that we don't explicitly state our time reference... history proves
> this over and over and over...
>
> TNX
> AH6LS
>
> > > Hi All- can anyone explain the use of "local time" in aprs. I cannot
> > > think of a use that does not cause problems outside of a very limited
> > > geographical area. Shouldn't all times be in zulu?
> >
> > APRS was designed for tactical-real-time support for emergency and special
> > event operations... ususally local.
> >      snip
> > During the protocol discussions to follow, I hope we dont lose sight of
> > the fundamental local/real-time urgent (but very rare) design objectives.
> >
> >
> >
> ---
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org
>
>
```

APRSDos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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---

## 27. [aprsspec] Re: Minor omission- Page 3

From: va3drv@rac.ca  
Date: Sun, 03 Oct 1999 01:00:19 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-42929-1999.10.03-00.12.33--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All!

For that matter, I didnt see any destinations reserved for the Palm OS platform either.

73! de Marc, VA3DRV.

Jeff King wrote:

```
>
> At the top of page 3, under Reserved DESTINATIONS, nothing
> exists for XASTIR, a released Linux based APRS display application
> written by Frank Giannandrea. (I am assuming the X-APRS designator
> was for the Sproul's Linux application, currently in Beta).
>
> -Jeff
>
> ---
> You are currently subscribed to aprsspec as: va3drv@rac.ca
```

> To unsubscribe send a blank email to [leave-aprsspec-11594T@lists.tapr.org](mailto:leave-aprsspec-11594T@lists.tapr.org)

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---

## 28. [aprsspec] Re: Minor omission- Page 3

From: Cap Pennell <[cap@cruzio.com](mailto:cap@cruzio.com)>  
Date: Sat, 02 Oct 1999 22:15:44 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11594-42930-1999.10.03-00.27.24--wd5ivd#tapr.org@lists.tapr.org](mailto:LYR11594-42930-1999.10.03-00.27.24--wd5ivd#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

At 01:00 AM 10/3/1999 -0400, Marc <[va3drv@rac.ca](mailto:va3drv@rac.ca)> wrote:

> For that matter, I didnt see any destinations reserved for the Palm OS  
>platform either.

Nor for the newer versions of APRSdos.  
73, Cap KE6AFE

--

Cap Pennell  
Santa Cruz, CA 95062-1002            3658.93N/12200.91W [CM86xx]  
email: [cap@cruzio.com](mailto:cap@cruzio.com)    home page: <http://members.cruzio.com/~cap>  
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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---

## 29. [aprsspec] RE: Omission - Page 8

From: Bill Diaz <[billdiaz@megsinet.net](mailto:billdiaz@megsinet.net)>  
Date: Sun, 03 Oct 1999 08:46:43 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11594-42971-1999.10.03-08.59.33--wd5ivd#tapr.org@lists.tapr.org](mailto:LYR11594-42971-1999.10.03-08.59.33--wd5ivd#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

The link provided appears to be incorrect.  
Try <http://www.tapr.org/tapr/html/Fpice.html>

Bill KC9XG

-----Original Message-----

From: Jeff King [SMTP:[jeff@aerodata.net](mailto:jeff@aerodata.net)]  
Sent: Saturday, October 02, 1999 10:57 PM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Omission - Page 8

The MIC-E protocol is not defined sufficiently for a programmer to implement it, either on page 8 or on page 17. As the MIC-E protocol can be somewhat confusing, I would recommend adding a reference to it such as: <http://www.tapr.org/tapr/html/mic-e-proto.html>

---

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---

## 30. [aprsspec] Re: Protocol process

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sun, 03 Oct 1999 17:18:47 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11594-43023-1999.10.03-16.30.11--wd5ivd#tapr.org@lists.tapr.org](mailto:LYR11594-43023-1999.10.03-16.30.11--wd5ivd#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

John:

I'm sorry to hear about your pending surgery.

> In the meantime, the aprsspec  
> mailing list will have to do most of the work, with some help from me.

Maybe it is time to ask the other members of the

WG to participate publicly, especially in light of your limited access in the coming weeks. It just seems like only you and Greg have spoken up so far on APRSSIG.

> 3. To make my life easier, please begin the "Subject" line of any  
> message that is intended to be a formal comment with "Comment:",  
> "Error:", "Omission:" or something similar, so I can filter submissions  
> from normal traffic.

Please add one more, called "Clarification:". These types are questions that would need to be answered before the close of the comment period. See my posting I just made:

Clarification needs to be made as  
to the target audience of this document.... is it:

1. Written for a programmer who is does not know APRS (which I hope is the intent).
2. Written for someone who has been exposed to it for some period of time and will have help from a APRS insider or can dig around enough on there own (reverse engineer) to figure things out (the omission of MIC-E, MIM telemetry, internet and compressed formats current puts it in this category)

In reviewing any kind of document, it is important to know ones target audience.

Thanks John and I hope your surgery goes well.

-Jeff

---

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---

### 31. [aprsspec] Re: Protocol process

From: John Ackermann <jra@febo.com>  
Date: Sun, 03 Oct 1999 18:39:58 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43041-1999.10.03-17.51.40--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> John:  
>  
> I'm sorry to hear about your pending surgery.

Thanks; it's not a huge deal, but it sure is annoying.

> Maybe it is time to ask the other members of the  
> WG to participate publicly, especially in light of your limited access  
> in the coming weeks. It just seems like only you and Greg have spoken  
> up so far on APRSSIG.

I'm not sure that's necessary, other than perhaps to discuss the point you make below. My role is to be the coordinator and facilitator; the authors are certainly encouraged to carry on discussions about the spec without me.

> > 3. To make my life easier, please begin the "Subject" line of any  
> > message that is intended to be a formal comment with "Comment:",  
> > "Error:", "Omission:" or something similar, so I can filter submissions  
> > from normal traffic.  
>  
> Please add one more, called "Clarification:". These types are questions  
> that would need to be answered before the close of the comment  
> period. See my posting I just made:

Understand your point. I wasn't trying to be exhaustive in the list; I was just trying to get a mechanism so I can quickly separate submissions from other traffic.

> Clarification needs to be made as  
> to the target audience of this document.... is it:  
>  
> 1. Written for a programmer who is does not know APRS (which I hope is the  
> intent).



>  
> 2. Written for someone who has been exposed to it for some period of time and  
> will have help from a APRS insider or can dig around enough on there  
> own (reverse engineer) to figure things out (the omission of  
> MIC-E, MIM telemetry, internet and compressed formats current puts it in  
> this category)  
>  
> In reviewing any kind of document, it is important to know ones target audience.

I can't answer this for the group; we never discussed it in quite this context in our meetings. But speaking for myself, I hope that the final protocol document is closer to your first option than the second.

I think, however, that in practice -- as with most protocols -- the document will only be able to take you so far, and looking at real-world implementations will fill in some details.

As to the omissions you cite, I don't think those are intentional but are the consequence of a first draft effort.

John

---

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## 32. [aprsspec] Re: Tactical Call Signs

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Sun, 3 Oct 1999 00:41:22 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-42944-1999.10.03-02.53.08--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

One clarification of the multiple TAC call message, if the first field does not contain an "=", then it is assumed to be the tactical call for the sending station. Example:

KH2Z>APS200,WIDE3-3::TACTICAL :Brent;WU2Z=Keith;WB4APR=Bob{0

Meaning:  
KH2Z is Brent  
WU2Z is Keith  
WB4APR=Bob

Of course, the following is also valid and does the same thing:  
KH2Z>APS200,WIDE3-3::TACTICAL :KH2Z=Brent;WU2Z=Keith;WB4APR=Bob{1

The prior construct is only in the most recent versions of APRS+SA. If you'd prefer to keep it simple, then maybe the following two constructs should be used:

For settings one own tactical callsign:  
KH2Z>APS200,WIDE3-3::TACTICAL :Brent{2

For setting multiple tactical callsigns in one message:  
KH2Z>APS200,WIDE3-3::TACTICAL :KH2Z=Brent;WU2Z=Keith;WB4APR=Bob{3

Also note, the way I implemented the transmission of tactical callsigns, is that they have line numbers, but are transmitted only once. They of course can be retransmitted by APRS+SA by a right-click on the message, and choosing transmit. Line numbers are not probably needed, and APRS+SA ignores them on reception any ways, since stations such an APRSdos station might transmit their tactical callsign, and would have a line number. Messages to TACTICAL should never receive an ACK because there should not be a station called TACTICAL.

Brent KH2Z

----- Original Message -----  
From: Keith Sproul <ksproul@vger.rutgers.edu>  
To: Brent Hildebrand <bhildebrand@earthlink.net>  
Sent: Saturday, October 02, 1999 3:48 PM  
Subject: Re: [aprsspec] Tactical Call Signs

> Brent..  
>  
> Thanks, this is exactly what I needed..

```

>
> Keith
>
>
> >Tactical (Tac) callsigns are a local display option only. But for the
> >purpose of exchanging Tac calls, APRS+SA supports several methods of
> >transmitting Tac calls. If a station sends an APRS message to TACTICAL,
the
> >message text then contains that station's Tac callsign. Example:
> >
> >Personal Tac callsign.
> >KH2Z>APS200,WIDE3-3::TACTICAL :Brent{1.
> >
> >The sending station is KH2Z, going to TACTICAL, thus, the TAC call for
KH2Z
> >is Brent.
> >
> >Multiple Tac calls, or sending the Tac call for another station, such as
a
> >stand-alone tracker,
> >the characters "=" and ";" are reserved for sending multiple tactical
> >callsigns in a single message.
> >
> >Example:
> >KH2Z>APS200,WIDE3-3::TACTICAL :WU2Z=Keith;WB4APR=Bob;N5B=Balloon1{2.
> >
> >The ";" character separates fields. The "=" separates callsign from Tac
> >callsign. Thus:
> >WU2Z has a Tac call of Keith.
> >WB4APR, Bob
> >N5B would be Balloon1.
> >
> >Note, older versions of APRS+SA used a colon to delimit fields. The above
> >example would be:
> >KH2Z>APS200,WIDE3-3::TACTICAL :WU2Z:Keith:WB4APR:Bob:N5B:Balloon1{3
> >
> >APRS+SA still supports both on receive.
> >
> >Other than reserving "=" and ";" and ":", no other limitations are
imposed
> >by APRS+SA on Tac callsigns. And in fact the reserved characters can be
> >used on the local display, but not for transmitting the Tac call over the
> >air.
> >
> >Brent KH2Z
> >
> >
> >
> >----- Original Message -----
> >From: Keith Sproul <ksproul@vger.rutgers.edu>
> >To: APRS Spec Discussion List <aprsspec@lists.tapr.org>
> >Cc: Bob Bruninga <bruninga@nadn.navy.mil>; <aprsspec@lists.tapr.org>
> >Sent: Saturday, October 02, 1999 10:48 AM
> >Subject: [aprsspec] Tactical Call Signs
> >
> >
> > > Brent
> > >
> > > I would like to get a copy of how you do the tactical call signs via
> > > APRS messages.
> > >
> > > This is one of the things that is not in the current spec that is
missing.
> > >
> > > Keith Sproul
> > > Keith Sproul 732 445-3695 Office
> > > Student Housing Network Coordinator 732 445-2968 Fax
> > > mailto:ksproul@rci.rutgers.edu 732 821-4828 Home
> > > http://dorm.rutgers.edu/~ksproul/ WU2Z
> > >
> > > ---
> > > You are currently subscribed to aprsspec as: bhildebrand@earthlink.net
> > > To unsubscribe send a blank email to
leave-aprsspec-11594T@lists.tapr.org
> > >
> > >
> Keith Sproul 732 445-3695 Office

```

> Student Housing Network Coordinator 732 445-2968 Fax  
> mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
> http://dorm.rutgers.edu/~ksproul/ WU2Z  
>

---

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---

### 33. [aprsspec] Tactical Call Signs

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Sat, 2 Oct 1999 13:48:31 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: Bob Bruninga <bruninga@nadn.navy.mil>, aprsspec@lists.tapr.org  
Message-ID: <LYR11594-42778-1999.10.02-13.01.55--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Brent

I would like to get a copy of how you do the tactical call signs via APRS messages.

This is one of the things that is not in the current spec that is missing.

Keith Sproul  
Keith Sproul 732 445-3695 Office  
Student Housing Network Coordinator 732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/ WU2Z

---

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---

### 34. [aprsspec] Re: FUNDAMENTAL: What does APRS stand for?

From: Mike Musick <mcmusick@anet-stl.com>  
Date: Tue, 5 Oct 1999 11:48:35 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43474-1999.10.05-12.05.44--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>I think I'm ready to go back to the "PACKET" name. I changed it to  
>POSITION when GPS became so popular, but it really was "PACKET" in the  
>early days.  
>

>So I say YES. PACKET.

Ohmygosh, Bob! Don't do that! LEAVE IT WHERE IT IS!

One of the prime directives of marketing is to decide on an "image" and stick with it. All the press in the past two years has been with "position", and "position" is self-explanatory. In so many words, "Automatic Position Reporting System" works - it instantly describes the core capability of the system to the uninitiated... and even non-hams. To change it back to the nebulous buzzword "packet" will be highly counterproductive.

I do realize that "APRS" belongs to you, but - please - don't make more work for everybody by changing the meaning of the acronym back to something meaningless outside of the fraternity.

...mike/N0QBF

---

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---

### 35. [aprsspec] Re: FUNDAMENTAL: What does APRS stand for?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 5 Oct 1999 13:19:11 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43481-1999.10.05-12.30.58--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ok, good point...

bob

On Tue, 5 Oct 1999, Mike Musick wrote:

```
> >I think I'm ready to go back to the "PACKET" name. I changed it to
> >POSITION when GPS became so popular, but it really was "PACKET" in the
> >early days.
> >
> >So I say YES. PACKET.
>
> Ohmygosh, Bob! Don't do that! LEAVE IT WHERE IT IS!
>
> One of the prime directives of marketing is to decide on an "image" and
> stick with it. All the press in the past two years has been with
> "position", and "position" is self-explanatory. In so many words,
> "Automatic Position Reporting System" works - it instantly describes the
> core capability of the system to the uninitiated... and even non-hams. To
> change it back to the nebulous buzzword "packet" will be highly
> counterproductive.
>
> I do realize that "APRS" belongs to you, but - please - don't make more
> work for everybody by changing the meaning of the acronym back to something
> meaningless outside of the fraternity.
>
> ...mike/N0QBF
>
> ---
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>
>
```

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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---

### 36. [aprsspec] Re: FUNDAMENTAL: What does APRS stand for?

From: Ian Wade <ian@dowmain.demon.co.uk>  
Date: Tue, 5 Oct 1999 20:27:28 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43503-1999.10.05-14.39.50--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

```
>On Tue, 5 Oct 1999, Mike Musick wrote:
>
>> Ohmygosh, Bob! Don't do that! LEAVE IT WHERE IT IS!
>>
>> One of the prime directives of marketing is to decide on an "image" and
>> stick with it.
```

You're absolutely right Mike! But we have to look to the future, not drag our heels in the past. APRS *\*used\_to\_be\** a *\*position\** reporting system, but it isn't any more. As we all know, it's very much more than that now.

You tell people today that it's a *\*position\** reporting system .... yawn, ho-hum, is that all? After all, you can buy GPS-enabled map packages off-the-shelf in the local computer store for a few dollars ....

Tell them instead about all of APRS's many capabilities, which, by the way, happen to include position reporting, *\*then\** you'll awaken interest.

As I said before, to just call it a *\*position\** system is IMHO doing APRS a great injustice. Now is the time and the opportunity to project it as something much more capable.

In a nutshell, APRS has changed a great deal since it first appeared. It's time we changed the name to reflect this -- even Bob agrees. To leave it *\*unchanged\** is the retrograde step.

The way to market APRS now is to tell the world that its name \*has\* changed. This will excite curiosity, it's something new, it's something much better than before! Remember, a lot of people probably didn't run with APRS in the old days because it was expensive, you could only report positions on crude maps, and it only worked on DOS/Windows/Mac.

Now you can attract them with a zillion features/benefits, it costs a lot less (the most popular version here in the UK costs only US\$16 to register), and it works on handhelds and Linux as well.

What do others think?

73

Ian, G3NRW

--

```
+-----+
| Editor: RSGB's RadCom "Data" column. |
| email: g3nrw@arrl.net |
| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
| |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

---

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---

### 37. [aprsspec] Re: FUNDAMENTAL: What does APRS stand for?

From: Marc <va3drv@rac.ca>  
Date: Tue, 05 Oct 1999 15:54:37 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43507-1999.10.05-15.07.22--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All!

I can't understand where you might think that real time position plotting of information is ho-hum, but alluding to an outdated, slow and sometimes cumbersome method of transporting that same information is new and exciting. Just what is so exciting about ax25 packet, especially at 1200 baud?

We all know that APRS is used to convey much more than simple position information, yet, the bottom line is that the vast majority of users will have a map with icons on it to look at.

In fact, from what I remember, the name already included packet at one point, and was changed to denote position when GPS was introduced. What's the marketing strategy in trying to change it back again? Why confuse things?

Might I suggest if we want to change the name we should change it to ADRS i.e.: Automatic Data Reporting System, or some such generic nomenclature.

I'm not necessarily advocating a name change. I think anyone who cares already knows, and anyone who might care MAY be turned off with the "Packet" in the name. What happens when we stop using ax25 packet to deliver the information? Another name change?

I hope not.

Besides, I already bought the T-shirt! (grin)

73! de Marc, VA3DRV.

Ian Wade wrote:

>

> >On Tue, 5 Oct 1999, Mike Musick wrote:

> >

> >> Ohmygosh, Bob! Don't do that! LEAVE IT WHERE IT IS!

> >>

> >> One of the prime directives of marketing is to decide on an "image" and

```

> >> stick with it.
>
> You're absolutely right Mike! But we have to look to the future, not
> drag our heels in the past. APRS *used_to_be* a *position* reporting
> system, but it isn't any more. As we all know, it's very much more than
> that now.
>
> You tell people today that it's a *position* reporting system .... yawn,
> ho-hum, is that all? After all, you can buy GPS-enabled map packages
> off-the-shelf in the local computer store for a few dollars ....
>
> Tell them instead about all of APRS's many capabilities, which, by the
> way, happen to include position reporting, *then* you'll awaken
> interest.
>
> As I said before, to just call it a *position* system is IMHO doing APRS
> a great injustice. Now is the time and the opportunity to project it as
> something much more capable.
>
> In a nutshell, APRS has changed a great deal since it first appeared.
> It's time we changed the name to reflect this -- even Bob agrees. To
> leave it *unchanged* is the retrograde step.
>
> The way to market APRS now is to tell the world that its name *has*
> changed. This will excite curiosity, it's something new, it's something
> much better than before! Remember, a lot of people probably didn't run
> with APRS in the old days because it was expensive, you could only
> report positions on crude maps, and it only worked on DOS/Windows/Mac.
>
> Now you can attract them with a zillion features/benefits, it costs a
> lot less (the most popular version here in the UK costs only US$16 to
> register), and it works on handhelds and Linux as well.
>
> What do others think?
>
> 73
> Ian, G3NRW
> --
> +-----+
> | Editor: RSGB's RadCom "Data" column. |
> | email: g3nrw@arrl.net |
> | AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
> | |
> | INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
> +-----+
>
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```

### 38. [aprsspec] Re: FUNDAMENTAL: What does APRS stand for?

```

From: Jeff King <jeff@aerodata.net>
Date: Tue, 05 Oct 1999 16:04:34 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43508-1999.10.05-15.18.31--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Marc wrote:

> Just what is so exciting about ax25 packet, especially at
> 1200 baud?

It can pass through a voice grade radio (e.g. "Data over Voice")

Also, an AVL protocol can be made very compact.... 6-8 bytes. When
you consider TXD times, the difference between 9600bps and 1200bps,
with regards to the data frame, is insignificant.

For pure AVL, its just not that bad.

-Jeff

btw, this is off topic (sorry)

```

---

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### 39. [aprsspec] Re: Mostly Formatting/Clarification comments to Spec. Document

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Tue, 5 Oct 1999 16:22:22 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-43509-1999.10.05-15.34.38--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>I just finished reviewing the Draft 1.0 Specification. I also just joined  
>the discussion list tonight, so some of this may be repeating earlier  
>comments I have not seen.  
>  
>Here are some suggestions to help make the document more readable based on  
>previous experience I have had with similar documents:  
>

<snip>

Darrell

Your comments were quite good, although somewhat more 'picky' than I  
had expected, the clarifications you suggested were all good...

I will include them in the next revision.

You asked one question that I want to answer now..

At 3:05 -0400 10/3/99, Darrell Hale wrote:

>9) Page 9 states that  
>  
> "The call of the station sending the object should be attached to the  
>object"  
>and "All receiving software must attach to the object the call of the  
>sending station".  
>  
>How is this done?  
>

We don't care HOW it is done, we are suggesting that the software  
keep track of the call sign that TRANSMITTED the object. This came  
up when multiple stations were transmitting Hurricane objects, some  
were doing it correctly and some were sending bad data (entered  
manually). Some of the earlier versions had no way of knowing WHO  
transmitted WHICH object after the actual packet that caused the  
object to appear got flushed out of the buffers.

|                                     |                     |
|-------------------------------------|---------------------|
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| Student Housing Network Coordinator | 732 445-2968 Fax    |
| mailto:ksproul@rci.rutgers.edu      | 732 821-4828 Home   |
| http://dorm.rutgers.edu/~ksproul/   | WU2Z                |

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### 40. [aprsspec] Re: Local Time

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Tue, 5 Oct 1999 16:22:20 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-43510-1999.10.05-15.34.40--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The only place (that I know of) that LOCAL time is currently used is  
in the NWS county alarms, and this is because the announcements on  
the radio are given as:

"The National Weather Service has issued a severe storm warning for the following counties, xxx xxx xxx xxx. This warning is in effect until 11:00pm this evening."

This time is always given in local time.

>Hi All- can anyone explain the use of "local time" in aprs. I cannot think  
>of a use that does not cause problems outside of a very limited  
>geographical area. Shouldn't all times be in zulu?  
>  
>73 de kg5qd Dale  
>  
>  
>---  
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#### 41. [aprsspec] RE: Version specific DESTINATION designators

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Tue, 5 Oct 1999 16:22:24 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43511-1999.10.05-15.34.49--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The APPxxx for the Mike Music's version was left out by accident..  
(Sorry Mike)

I don't remember if APRS-Max has its own ID or not, Bob can clarify that.

As for the XASTIR, he has not been assigned anything yet, nor has he asked for one that I know of... (Bob?)

APXxxx is for the Sproul's X-APRS..

And since the Server is currently down, I can't easily go find out if he is actually using anything specific at the moment...

Thanks for the clarifications..

This is the type of stuff that I was hoping to get on this list....

Keith Sproul

At 1:00 -0400 10/3/99, va3drv@rac.ca wrote:

>Hi All!  
>  
> For that matter, I didnt see any destinations reserved for the Palm OS  
>platform either.  
>  
>73! de Marc, VA3DRV.

>Nor for the newer versions of APRSdos.  
>73, Cap KE6AFE  
>--

>  
>  
>Jeff King wrote:  
> >  
> > At the top of page 3, under Reserved DESTINATIONS, nothing  
> > exists for XASTIR, a released Linux based APRS display application  
> > written by Frank Giannandrea. (I am assuming the X-APRS designator  
> > was for the Sproul's Linux application, currently in Beta).  
> >



> > -Jeff

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Student Housing Network Coordinator      732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu           732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/        WU2Z

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## 42. [aprsspec] Re: Omission - Page 8

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Tue, 5 Oct 1999 16:22:26 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43512-1999.10.05-15.35.22--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Yes, that is correct, I was going to refer to some other document  
about the Mic-E.

This reference will be added to the next revision..

>The MIC-E protocol is not defined sufficiently for a programmer to  
>implement it, either on page 8 or on page 17. As the MIC-E protocol  
>can be somewhat confusing, I would recommend adding a reference to  
>it such as: <http://www.tapr.org/tapr/html/mic-e-proto.html>

>

>

>---

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Student Housing Network Coordinator      732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu           732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/        WU2Z

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---

## 43. [aprsspec] References

From: Tim Salo <salo@networkcs.com>  
Date: Tue, 5 Oct 1999 15:43:56 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43514-1999.10.05-15.55.36--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Tue, 5 Oct 1999 16:22:26 -0400  
> From: Keith Sproul <ksproul@vger.rutgers.edu>  
> Subject: [aprsspec] Re: Omission - Page 8  
>

> Yes, that is correct, I was going to refer to some other document  
> about the Mic-E.

>

> This reference will be added to the next revision..

>        [...]

I believe that in general information should be included in the APRS  
protocol specification, rather than merely referenced

- o        Including the information in the APRS protocol specification  
         ensures that it is reviewed for correctness and corrected if it  
         is incomplete or incorrect.
- o        Most of the documents that are likely to be referred by the  
         protocol specification were not written as protocol specifications.  
         As such, they are likely to contain extraneous information (e.g.,  
         information about how a particular implementation works,  
         information about how to use a particular implementation, or  
         descriptions about how certain protocol constructs are displayed)  
         and are unlikely to be rigorous, (e.g., using terms such as "must"  
         and "should" appropriately).

-tjs

---

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#### 44. [aprsspec] Re: References

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Tue, 5 Oct 1999 16:49:46 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-43515-1999.10.05-16.03.19--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>  
>I believe that in general information should be included in the APRS  
>protocol specification, rather than merely referenced

I agree with you, and will be doing that, just until we get it all  
done, the references are better than nothing.

The one exception to this is the NMEA spec, that is copyrighted by a  
different organization, and we will reference that.

Keith Sproul

|                                     |                     |
|-------------------------------------|---------------------|
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| Student Housing Network Coordinator | 732 445-2968 Fax    |
| mailto:ksproul@rci.rutgers.edu      | 732 821-4828 Home   |
| http://dorm.rutgers.edu/~ksproul/   | WU2Z                |

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#### 45. [aprsspec] RE: Version specific DESTINATION designators

From: Jeff King <jeff@aerodata.net>  
Date: Tue, 05 Oct 1999 17:00:05 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: Keith Sproul <ksproul@vger.rutgers.edu>,  
APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43517-1999.10.05-16.13.50--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Frank:

Please see the attached. It was pointed out on the APRSSPEC list that  
your APRS display program "XASTIR" had not been assigned a version  
specific designator. The comment was made by a A:PRS-WG member that  
he was not aware of you asking for one.

As I don't know if your on the list, or if anyone else contracted you,  
I thought you might want to opportunity to request a designator, if  
you needed one. Please ignore this message if your already aware  
of this discrepancy.

Regards,

Jeff

Keith Sproul wrote:

> The APPxxx for the Mike Music's version was left out by accident..  
> (Sorry Mike)  
>  
> I don't remember if APRS-Max has its own ID or not, Bob can clarify that.  
>  
> As for the XASTIR, he has not been assigned anything yet, nor has he  
> asked for one that I know of... (Bob?)  
>  
> APXxxx is for the Sproul's X-APRS..  
>  
> And since the Server is currently down, I can't easily go find out if  
> he is actually using anything specific at the moment..  
>  
> Thanks for the clarifications..  
>  
> This is the type of stuff that I was hoping to get on this list....  
>

```

> Keith Sproul
>
> At 1:00 -0400 10/3/99, va3drv@rac.ca wrote:
> >Hi All!
> >
> > For that matter, I didnt see any destinations reserved for the Palm OS
> >platform either.
> >
> >73! de Marc, VA3DRV.
>
> >Nor for the newer versions of APRSdos.
> >73, Cap KE6AFE
> >--
>
> >
> >
> >Jeff King wrote:
> > >
> > > At the top of page 3, under Reserved DESTINATIONS, nothing
> > > exists for XASTIR, a released Linux based APRS display application
> > > written by Frank Giannandrea. (I am assuming the X-APRS designator
> > > was for the Sproul's Linux application, currently in Beta).
> > >
> > > -Jeff
>
> Keith Sproul 732 445-3695 Office
> Student Housing Network Coordinator 732 445-2968 Fax
> mailto:ksproul@rci.rutgers.edu 732 821-4828 Home
> http://dorm.rutgers.edu/~ksproul/ WU2Z
>
> ---
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```

```

---
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```

## 46. [aprsspec] APRS Version Designators

```

From: Tim Salo <salo@networkcs.com>
Date: Tue, 5 Oct 1999 16:25:40 -0500 (CDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43521-1999.10.05-16.37.19--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

Why is the version of the transmitting station contained in the AX.25 Source Address?

I believe that consideration should be given to marking this protocol feature as "deprecated", (i.e., APRS receivers should accept packets with software version identification in the AX.25 Source Address, but APRS senders ought not put software version identification in the AX.25 Source Address).

Are there any cases where the receiving software operates differently based on the software version identification contained in a received APRS packet? If the answer is "Yes", then I have some concern about the protocol and its specification. If the answer is "No", then it sounds like the feature could be deprecated without difficulty.

I have three specific concerns about this feature:

- o This feature has the appearances of a backdoor method of controlling APRS implementations. All we know is that new software identifiers must be approved by the current [authorized] implementors. Whatever the actual facts, this presents the appearances of potential conflict.
- o Presumably, we will see lots of new APRS implementations in the future. I think we ought to have a really good reason to keep revising the protocol specification as new implementations are created, (or worse, not updating the specification).
- o This section has the appearance of being intimately tied with Bob's licensing and consulting activities. This seems to offer the potential for future misunderstandings.

-tjs

---

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## 47. [aprsspec] RE: Version specific DESTINATION designators

From: Frank Giannandrea <fgiannan@genoagroup.com>  
Date: Tue, 5 Oct 1999 15:35:56 -0600 (MDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: fgiannan@eazy.net, Keith Sproul <ksproul@vger.rutgers.edu>, APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43525-1999.10.05-16.47.45--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Jeff, Keith, APRS-WG members, and WG-SIG,

Jeff, Thanks.. and I did get this..

As to this issue, I don't think this should be a "BIG" issue.. as I just received a new message (from the sig as he states "The letter 'Z' is reserved for 'EXPERIMENTAL', which is correct."). I don't think that this may be the proper discussion for this sig, but I did want to clear out any further discussion. As I am not in the "regular" group of APRS developers, I didn't even think ask for any special designator. If the members of the group want to add this that is fine with me, but it is not as important as a standard written protocol. I would point out that this is a transition, things will take time, don't waste time on the small details. I would rather have it all play nice together.

Keith,  
Thanks for the clarification.

73,  
Frank

On Tue, 5 Oct 1999, Jeff King wrote:

> Frank:  
>  
> Please see the attached. It was pointed out on the APRSSPEC list that  
> your APRS display program "XASTIR" had not been assigned a version  
> specific designator. The comment was made by a A:PRS-WG member that  
> he was not aware of you asking for one.  
>  
> As I don't know if your on the list, or if anyone else contracted you,  
> I thought you might want to opportunity to request a designator, if  
> you needed one. Please ignore this message if your already aware  
> of this discrepancy.  
>  
> Regards,  
>  
> Jeff  
>  
>  
> Keith Sproul wrote:  
>  
> > The APPxxx for the Mike Music's version was left out by accident..  
> > (Sorry Mike)  
> >  
> > I don't remember if APRS-Max has its own ID or not, Bob can clarify that.  
> >  
> > As for the XASTIR, he has not been assigned anything yet, nor has he  
> > asked for one that I know of... (Bob?)  
> >  
> > APXxxx is for the Sproul's X-APRS..  
> >  
> > And since the Server is currently down, I can't easily go find out if  
> > he is actually using anything specific at the moment...  
> >  
> > Thanks for the clarifications..  
> >  
> > This is the type of stuff that I was hoping to get on this list....  
> >  
> > Keith Sproul  
> >  
> > At 1:00 -0400 10/3/99, va3drv@rac.ca wrote:

---

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---

## 48. [aprsspec] Re: APRS Version Designators

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 5 Oct 1999 18:39:45 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43538-1999.10.05-17.52.03--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Wrong on all counts. The intent is to identify the code source and version of a packet for troubleshooting. With everyone and his brother now in the game, this is even more important than ever.

de WB4APR, Bob

On Tue, 5 Oct 1999, Tim Salo wrote:

> Why is the version of the transmitting station contained in the AX.25  
> Source Address?  
>  
> I believe that consideration should be given to marking this protocol  
> feature as "deprecated", (i.e., APRS receivers should accept packets with  
> software version identification in the AX.25 Source Address, but APRS  
> senders ought not put software version identification in the AX.25  
> Source Address).  
>  
> Are there any cases where the receiving software operates differently  
> based on the software version identification contained in a received  
> APRS packet? If the answer is "Yes", then I have some concern about  
> the protocol and its specification. If the answer is "No", then it  
> sounds like the feature could be deprecated without difficulty.  
>  
> I have three specific concerns about this feature:  
>  
> o This feature has the appearances of a backdoor method of controlling  
> APRS implementations. All we know is that new software identifiers  
> must be approved by the current [authorized] implementors.  
> Whatever the actual facts, this presents the appearances of  
> potential conflict.  
>  
> o Presumably, we will see lots of new APRS implementations in the  
> future. I think we ought to have a really good reason to  
> keep revising the protocol specification as new implementations  
> are created, (or worse, not updating the specification).  
>  
> o This section has the appearance of being intimately tied with  
> Bob's licensing and consulting activities. This seems to offer  
> the potential for future misunderstandings.  
>  
> -tjs  
>  
> ---  
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil  
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org  
>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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---

## 49. [aprsspec] Re: APRS Version Designators

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 5 Oct 1999 18:46:19 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43539-1999.10.05-17.58.00--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

All,

I copied this off the AMSAT BB. I think APRSdos assumes feet too.  
I will correct this in my next version to check for "units" in the  
altitude field... bob

-----  
On a much less critical note:

A few balloon launches back we noticed that the balloon GPS data  
said the payload was at 20,000 feet an hour after launch. It was  
SUPPOSED to be at 60K+ feet.

You guessed it. The GPS was putting out altitude in meters,  
and the ground software wasn't doing the conversion. Fortunately  
the simple analog temperature sensor told the true story, although  
less accurate (temp to altitude conversion). We finally figured  
out that things were working. We just weren't translating.

We got off much cheaper than NASA...

Andy W5ACM

On Fri, 1 Oct 1999, Dr Thomas A Clark (W3IWI) wrote:

> This would be funny if it wasn't so sad! NASA today released a  
> report on the reason that the the Mars Climate Observer had its  
> catastrophic failure last week. The Lockheed-Martin (LockMart -- your  
> one stop aerospace contractor) team in Colorado transmitted some  
> crucial data to the JPL controllers. Unfortunately, LockMart  
> used English (feet-inches) and JPL expected metric units. The  
> result was that the spacecraft was destroyed as it slammed into the  
> Martian atmosphere. The following press release is on the NASA web  
> site at URL  
>  
> <ftp://ftp.hq.nasa.gov/pub/pao/pressrel/1999/99-113.txt>  
>  
> Tom  
>  
> -----  
>  
> > MARS CLIMATE ORBITER TEAM FINDS LIKELY CAUSE OF LOSS  
> >  
> > A failure to recognize and correct an error in a transfer of  
> > information between the Mars Climate Orbiter spacecraft team in  
> > Colorado and the mission navigation team in California led to the  
> > loss of the spacecraft last week, preliminary findings by NASA's  
> > Jet Propulsion Laboratory internal peer review indicate.  
> >  
> > "People sometimes make errors," said Dr. Edward Weiler,  
> > NASA's Associate Administrator for Space Science. "The problem  
> > here was not the error, it was the failure of NASA's systems  
> > engineering, and the checks and balances in our processes to  
> > detect the error. That's why we lost the spacecraft."  
> >  
> > The peer review preliminary findings indicate that one team  
> > used English units (e.g., inches, feet and pounds) while the other  
> > used metric units for a key spacecraft operation. This  
> > information was critical to the maneuvers required to place the  
> > spacecraft in the proper Mars orbit.  
> >  
> > "Our inability to recognize and correct this simple error  
> > has had major implications," said Dr. Edward Stone, director of  
> > the Jet Propulsion Laboratory. "We have underway a thorough  
> > investigation to understand this issue."  
> >  
> > Two separate review committees have already been formed to  
> > investigate the loss of Mars Climate Orbiter: an internal JPL peer  
> > group and a special review board of JPL and outside experts. An  
> > independent NASA failure review board will be formed shortly.  
> >  
> > "Our clear short-term goal is to maximize the likelihood of a  
> > successful landing of the Mars Polar Lander on December 3," said  
> > Weiler. "The lessons from these reviews will be applied across the

> > board in the future."  
> >  
> > Mars Climate Orbiter was one of a series of missions in a  
> > long-term program of Mars exploration managed by the Jet  
> > Propulsion Laboratory for NASA's Office of Space Science,  
> > Washington, DC. JPL's industrial partner is Lockheed Martin  
> > Astronautics, Denver, CO. JPL is a division of the California  
> > Institute of Technology, Pasadena, CA.  
> ----  
> Via the amsat-bb mailing list at AMSAT.ORG courtesy of AMSAT-NA.  
> To unsubscribe, send "unsubscribe amsat-bb" to Majordomo@amsat.org  
>  
  
----  
Via the amsat-bb mailing list at AMSAT.ORG courtesy of AMSAT-NA.  
To unsubscribe, send "unsubscribe amsat-bb" to Majordomo@amsat.org  
  
---  
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---

## 50. [aprsspec] APRS Objects

From: Wes Johnston <kd4rdb@netzero.com>  
Date: Tue, 05 Oct 1999 19:24:05 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43544-1999.10.05-18.36.46--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I made a suggestion to the APRS authors a few weeks ago, and perhaps this is the forum to mention again.

If we are to gain any credibility with any official agency (ie the NWS), we need a way to control objects better.

1) We need a 2nd level of objects that can ONLY be created and modified by "official" stations, such as SKYWARN stations. General users should be able to create objects as usual and move them around.

2) There should be a method for turning off all "non official" objects on YOUR screen. Any object you create will be visible regardless of the state of this QRM filter.

Using this method, we can publish "official" storm positions, and not have to see ALL of the other erroneous positions / misspelled storms. We can prevent unofficial stations from grabbing an official object and moving it for us. All that we need to do is alter the symbol that begins the object. Presently it is a semicolon. I'm not sure which ASCII character we'd choose to use, and it doesn't matter... just as long as "unofficial" stations continue to create semicolon objects, and are not permitted to create "official other yet to be decided ascii characters" messages.

Hope this makes sense!  
Wes

Wes  
kd4rdb@usa.net  
Stupidity should be painful

---

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## 51. [aprsspec] Re: Local Time

From: amartin@interactive.net (Art Martin)  
Date: Tue, 05 Oct 1999 20:06:27 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43546-1999.10.05-19.18.40--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi, all...

I agree with Keith in that the verbal "in effect to" time is local. As

such it is directed to those close enough to the issuing office who are (usually) in the same time zone.

The encoded data header for NWS WX (including counties and zones) ends with ZULU/UTC although not normally indicated with the Z indicator. These releases can be captured by distant users in other time zones, via the internet, world-wide.

Having a transmitted time or day/time with Z (or U as an optional value for the purists) as the trailing character could be considered for incorporation into the Specification. Packet operators world-wide have long understood the usage of the Z indicator in time specification.

I support the concept of having Local time as a display only value which would be a local option with the user.

Thanks for the use of the soapbox.  
73 de Art  
--

Keith Sproul wrote:

```
>
> The only place (that I know of) that LOCAL time is currently used is
> in the NWS county alarms, and this is because the announcements on
> the radio are given as:
>
> "The National Weather Service has issued a severe storm
> warning for the following counties, xxx xxx xxx xxx. This warning is
> in effect until 11:00pm this evening."
>
> This time is always given in local time.
>
> >Hi All- can anyone explain the use of "local time" in aprs. I cannot think
> >of a use that does not cause problems outside of a very limited
> >geographical area. Shouldn't all times be in zulu?
> >
> >73 de kg5qd Dale
> >
> >
> >---
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>
> Keith Sproul                732 445-3695 Office
> Student Housing Network Coordinator 732 445-2968 Fax
> mailto:ksproul@rci.rutgers.edu    732 821-4828 Home
> http://dorm.rutgers.edu/~ksproul/  WU2Z
>
> ---
> You are currently subscribed to aprsspec as: amartin@interactive.net
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org
```

```
--
Art Martin N2QAE
Long Valley, Morris County, NJ, USA
mailto:amartin@interactive.net
Find me at: http://map.aprs.net:8000/n2qae
--
```

```
---
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```

---

## 52. [aprsspec] Re: Local Time

```
From: "Dave VanHorn" <dvanhorn@cedar.net>
Date: Tue, 5 Oct 1999 19:13:29 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43547-1999.10.05-19.25.30--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Having a transmitted time or day/time with Z (or U as an optional value
> for the purists) as the trailing character could be considered for
> incorporation into the Specification. Packet operators world-wide have
> long understood the usage of the Z indicator in time specification.
>
> I support the concept of having Local time as a display only value which
> would be a local option with the user.
```



I completely agree, Z is the only way to always know.  
I live in E indiana where we do not mess with our clocks twice a year.  
If it's not Z, then there's a mess of interpreting to do, based on where the  
sending station is.. :-P

Now if we used swatch beats.... (oonly kidding!)

---

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### 53. [aprsspec] Re: APRS Objects

From: smorris@mindspring.com  
Date: Tue, 5 Oct 1999 21:43:05 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43562-1999.10.05-20.52.13--wd5ivd@tapr.org@lists.tapr.org>  
Rendered body type: text/plain

What you are saying is a good idea. It would be a layering of the stations. This is done a great deal in network drawings and maps, which APRS is a network/map drawing. One layer is the map, the next layer would be the "Official" objects, and a third layer could be the general users. But this adds a level of complexity, maybe not to the APRS spec, but how the APRS software would be written. There would have to be an additional identifier added of some type to designate what type of station it is, official vs. general.

Just my thoughts.

Scott

----- Original Message -----

From: Wes Johnston <kd4rdb@netzero.com>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Sent: Tuesday, October 05, 1999 7:24 PM  
Subject: [aprsspec] APRS Objects

> I made a suggestion to the APRS authors a few weeks ago, and perhaps this  
> is the forum to mention again.  
>  
> If we are to gain any credibility with any official agency (ie the NWS),  
we  
> need a way to control objects better.  
>  
> 1) We need a 2nd level of objects that can ONLY be created and modified by  
> "official" stations, such as SKYWARN stations. General users should be  
> able to create objects as usual and move them around.  
>  
> 2) There should be a method for turning off all "non official" objects on  
> YOUR screen. Any object you create will be visible regardless of the  
state  
> of this QRM filter.  
>  
> Using this method, we can publish "official" storm positions, and not have  
> to see ALL of the other erroneous positions / misspelled storms. We can  
> prevent unofficial stations from grabbing an official object and moving it  
> for us. All that we need to do is alter the symbol that begins the  
> object. Presently it is a semicolon. I'm not sure which ASCII character  
> we'd choose to use, and it doesn't matter... just as long as "unofficial"  
> stations continue to create semicolon objects, and are not permitted to  
> create "official other yet to be decided ascii characters" messages.  
>  
> Hope this makes sense!  
> Wes  
>  
>  
> Wes  
> kd4rdb@usa.net  
> Stupidity should be painful  
>  
-----  
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>  
> ---  
> You are currently subscribed to aprsspec as: smorris@mindspring.com

> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org  
>

---

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## 54. [aprsspec] Re: APRS Objects

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Tue, 5 Oct 1999 22:17:32 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-43565-1999.10.05-21.30.33--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Wes,

Although I completely agree with what you are proposing, it might not be a protocol issue. It might just be a software issue on the users end. One example could be to have a list of 'known good originating stations' that software says ONLY SHOW OBJECTS IF THEY CAME FROM ONE OF THESE STATIONS..

This is one of the reasons we have 'magic secret decoder ring' for the issuing of NWS county alerts.. The NWS specifically asked us to limit the creation of these alerts.

I agree that we have to cut down on the bad reports.. The MAIN way should be via education...

As for the storms etc, the stuff that Dale Hugely is doing to automatically create this will (hopefully) reduce the number of people putting up the erroneous ones..

Keith

>I made a suggestion to the APRS authors a few weeks ago, and perhaps this is the forum to mention again.

>

>If we are to gain any credibility with any official agency (ie the >NWS), we need a way to control objects better.

>

>1) We need a 2nd level of objects that can ONLY be created and >modified by "official" stations, such as SKYWARN stations. General >users should be able to create objects as usual and move them around.

>

>2)There should be a method for turning off all "non official" >objects on YOUR screen. Any object you create will be visible >regardless of the state of this QRM filter.

>

>Using this method, we can publish "official" storm positions ,and >not have to see ALL of the other erroneous positions / misspelled >storms. We can prevent unofficial stations from grabbing an >official object and moving it for us. All that we need to do is >alter the symbol that begins the object. Presently it is a >semicolon. I'm not sure which ASCII character we'd choose to use, >and it doesn't matter... just as long as "unofficial" stations >continue to create semicolon objects, and are not permitted to >create "official other yet to be decided ascii characters" messages.

>

>Hope this makes sense!

>Wes

>

>

>Wes

>kd4rdb@usa.net

>Stupidity should be painful

Keith Sproul 732 445-3695 Office  
Student Housing Network Coordinator 732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/ WU2Z

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## 55. [aprsspec] Re: APRS Objects

From: Wes Johnston <kd4rdb@netzero.com>  
Date: Tue, 05 Oct 1999 22:34:57 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-43566-1999.10.05-21.47.13--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Dale is publishing these objects... but for example when Hurricane Floyd came thru, I literally waited for 8 or 10 hours to get Floyd on my screen at all... I realize that he is publishing this data when it is given to him, but we need to think about the "net cycle" time of 30 mins... and include such objects in there. Otherwise, someone will take it upon themselves to create Floyd. If Floyd already exists, they wouldn't feel the need.

Another issue is malicious use of an object. We need to be able to create an object that no one but an official user can move. That way Mr. Average Joe won't click on the hurricane with his ALT button pressed and drag it around (not realizing that he's moving it on EVERYONE's screens.). When I showed APRS off for the Georgetown SC EOC a few years ago, that was one of their concerns.. I said aprs was an open system... they said "We don't want anyone controlling our objects".

Wes

At 10:17 PM 10/5/99 -0400, Keith Sproul wrote:

>Wes,  
>  
>Although I completely agree with what you are proposing, it might not be a  
>protocol issue. It might just be a software issue on the users end. One  
>example could be to have a list of 'known good originating stations' that  
>software says ONLY SHOW OBJECTS IF THEY CAME FROM ONE OF THESE STATIONS..  
>  
>  
>This is one of the reasons we have 'magic secret decoder ring' for the  
>issuing of NWS county alerts.. The NWS specifically asked us to limit the  
>creation of these alerts.  
>  
>I agree that we have to cut down on the bad reports.. The MAIN way should  
>be via education..  
>  
>As for the storms etc, the stuff that Dale Hugely is doing to  
>automatically create this will (hopefully) reduce the number of people  
>putting up the erroneous ones..  
>  
>  
>Keith  
>  
>Keith Sproul                               732 445-3695 Office  
>Student Housing Network Coordinator      732 445-2968 Fax  
>mailto:ksproul@rci.rutgers.edu           732 821-4828 Home  
>http://dorm.rutgers.edu/~ksproul/       WU2Z

Wes  
kd4rdb@usa.net  
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---

## 56. [aprsspec] Omissions, References, requests for clarification: WX, NTS traffic, NSW, etc.

From: "Dale E. Reed" <w8abz@mindspring.com>  
Date: Tue, 5 Oct 1999 22:51:15 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43567-1999.10.05-22.04.16--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I perused the 22 messages in the Web page "Visit" before I signed up. Then I bounced a message, found out two days later. I hope the following discourse is not redundant. Apologies if it is....

On page 8, in the Weather Report section, reference is made to WX.TXT, but

it is not available at the APRS spec. web page. Obviously, all referenced files should be included on the web page for review.

{NOTE: I should have read WX.TXT before typing the following, but this comes from a reading of the protocol spec itself:}

Also, in the wx example given:

(I quote)

@DDHMM/DDMM.hhN/DDMM.hhW\_CSE/SPDgXXXtXXXrXXXpXXXpXXXhXXbXXXXdU2k

r is in hundredths of an inch of rain in the LAST HOUR

p is in hundredths of an inch of rain in the LAST 24 HOURS

P is in hundredths of an inch of rain since midnight

s is INCHES of snow in the last 24 hours

b is in tenths of millibars

h is percent humidity (00=100%)

dU2k is Ultimeater 2000,

U5 is the 500,

Dvs is Davis

RSW is Radio Shack

PIC is a PIC device (K4HG?)

HKT is Heathkit

The first character designates what version of APRS

'd' = APRSdos

'W' = WinAPRS

'M' = MacAPRS

'X' = X-APRS (Linux)

'S' = APRS+SA

Lxxx is luminosity in Watts per square meter 999 and below

lxxx is luminosity in Watts per square meter 1000 and above

L is inserted in place of one of the rain values.

(end of quote)

... no reference is made to the gXXX and tXXX; I assume these are gust speed (what basis? peak, 1 min. avg., other? what units, for that matter?) and temperature (whole degrees F, I assume... signed? where does the "-" go? how to represent -100 degf?)

In the "dU2K", is the "d" the DOS designator, so that WU2K would be the U2000 reported by WinAPRS? Then other examples would be dU5, MDvs, etc...

Also, what is the usage of "luminosity"?

I'm guessing all these are answered in WX.TXT...

Also, I'm assuming, but it's not stated explicitly, that the letter (g, t, l, etc.) comes BEFORE the digits of the corresponding value. (Again, WX.TXT) Are all values are fixed width or some variable?

Yes, I know, I'll go back and read my copy of WX.TXT from my APRS docs.

The position examples use N and W; I assume S and E are valid. Which letter is used for positions of 00.0000 latitude and 000.0000 and 180.0000 longitude? Even if they "never" appear, it is possible to navigate there, so it should be stated in the spec. Is either letter allowable (00.0000N = 00.0000S)?

The protocol seems to have, but it is not explicitly stated so anywhere, various "sections", like a position section, a comments section, etc., so that any "position" format could be substituted in the appropriate part of the packet. Is this so? To what extent? Could a WX report be sent with a Pos in GRID-in-T0 format? An object sent with a MIC-E compressed pos? Please be VERY clear on the allowable combinations of these "parts" -- position, weather, telemetry, comments, messages / bulletins / announcements, mail, any others. Altitude? Or is that only in the appropriate GPS format (GPRMC, I think...)? Also, there is no reference to or discussion of NTS traffic handling. Is there a specific sequence of messages used for the message number, originating station, check, place of origin, time/date, addressee, message and signature?

Basically, are we documenting only what is currently being sent over the air, or are we documenting what is acceptable to at least some version (DOS, Mac, Win, X, Xastir, +, Palm), whether it actually occurs on the air or not, but is still part of the "current protocol"?

73 and MANY thanks for the effort to date! (After all, this is a HOBBY!) And thanks for listening to my diatribe. (Go, Tribe!)

Dale, W8ABZ  
Cleveland Hts., OH

---

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---

## 57. [aprsspec] Re: APRS Objects

From: amartin@interactive.net (Art Martin)  
Date: Tue, 05 Oct 1999 22:57:44 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43568-1999.10.05-22.09.12--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi, all....

On a side issue (NWS WX counties) some document, somewhere, might include the concept of prioritizing the NWS warning/watch/advisory/etc so that the highest priority would be displayed (the on-top layer concept) until it reached expiration. Then automatically replace that higher priority item with the next highest, ad infinitum, until there were no more WX items to be displayed for that location. I am not aware that we have any APRS software that will permit that to occur.... yet. TNX for the use of the soapbox!  
73 de Art  
--

Keith Sproul wrote:

>  
> Wes,  
>  
> Although I completely agree with what you are proposing, it might not  
> be a protocol issue. It might just be a software issue on the users  
> end. One example could be to have a list of 'known good originating  
> stations' that software says ONLY SHOW OBJECTS IF THEY CAME FROM ONE  
> OF THESE STATIONS..  
>  
> This is one of the reasons we have 'magic secret decoder ring' for  
> the issuing of NWS county alerts.. The NWS specifically asked us to  
> limit the creation of these alerts.  
>  
> I agree that we have to cut down on the bad reports.. The MAIN way  
> should be via education..  
>  
> As for the storms etc, the stuff that Dale Hugely is doing to  
> automatically create this will (hopefully) reduce the number of  
> people putting up the erroneous ones..  
>  
> Keith  
>  
> >I made a suggestion to the APRS authors a few weeks ago, and perhaps this is the forum to mention  
again.  
> >  
> >If we are to gain any credibility with any official agency (ie the  
> >NWS), we need a way to control objects better.  
> >  
> >1) We need a 2nd level of objects that can ONLY be created and  
> >modified by "official" stations, such as SKYWARN stations. General  
> >users should be able to create objects as usual and move them around.  
> >  
> >2)There should be a method for turning off all "non official"  
> >objects on YOUR screen. Any object you create will be visible  
> >regardless of the state of this QRM filter.  
> >  
> >Using this method, we can publish "official" storm positions ,and  
> >not have to see ALL of the other erroneous positions / misspelled  
> >storms. We can prevent unofficial stations from grabbing an  
> >official object and moving it for us. All that we need to do is  
> >alter the symbol that begins the object. Presently it is a  
> >semicolon. I'm not sure which ASCII character we'd choose to use,  
> >and it doesn't matter... just as long as "unofficial" stations  
> >continue to create semicolon objects, and are not permitted to  
> >create "official other yet to be decided ascii characters" messages.  
> >  
> >Hope this makes sense!

```

> >Wes
> >
> >
> >Wes
> >kd4rdb@usa.net
> >Stupidity should be painful
>
> Keith Sproul                732 445-3695 Office
> Student Housing Network Coordinator 732 445-2968 Fax
> mailto:ksproul@rci.rutgers.edu      732 821-4828 Home
> http://dorm.rutgers.edu/~ksproul/    WU2Z
>
> ---
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--
Art Martin N2QAE
Long Valley, Morris County, NJ, USA
mailto:amartin@interactive.net
Find me at: http://map.aprs.net:8000/n2qae
--
---
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```

---

## 58. [aprsspec] Re: APRS Objects

```

From: "Jim Gill" <jimgill@ix.netcom.com>
Date: Tue, 5 Oct 1999 21:49:55 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43569-1999.10.05-22.11.33--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Something I have thought of/seen, of course related to the hurricane problem, is (potentially unknowing)
use of duplicate object names. For example, somewhere in the midwest someone sends a HAMFEST object.
A day later, someone else, different city, maybe unaware of the other object, sends a HAMFEST object for
their city, removing the other valid object. They maybe should have used HAMFEST2 or whatever.

I don't know if it would be practical to have some sort of error-trapping built in the software to say
"there is another object with this name, are you sure you want to send this object, YES or RENAME your
object", etc., since we are on a national scale not just local even with local RF objects.

Another 0.02 .

Jim
NØRMO
Omaha, NE

> We need to be able to create
> an object that no one but an official user can move. That way Mr. Average
> Joe won't click on the hurricane with his ALT button pressed and drag it
> around (not realizing that he's moving it on EVERYONE's screens.). When I
> showed APRS off for the Georgetown SC EOC a few years ago, that was one of
> their concerns.. I said aprs was an open system... they said "We don't want
> anyone controlling our objects".
>

---
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```

---

## 59. [aprsspec] Comment:Local Time and Objects

```

From: "Dale Huguley" <kg5qd@worldnet.att.net>
Date: Wed, 6 Oct 1999 10:28:19 -0000
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-43611-1999.10.06-05.44.17--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I occurs to me that "Local Time" could be designated with a single character
for the time zone- there is something like that already in the database I
use to generate NWS maps. My problem with "Local time" is that if you are
outside of the "Local Area" you have to know the sending station's
position. to decipher the time. If your time zone is different than the
"local time" you will never see a lot of the NWS warnings. If you are in
Yuma Arizona and issue NWS warnings for the Yuma/Imperial area you have a

```

devil of a time deciding which time zone to use.

Keith Sproul and I had talked about a first character designator for "Automatically Parsed Data" to take care of some of the problems with Hurricanes, Tornados etc. Presently there is a "." (period) for Space Weather which could be redefined as "Automatic". The various authors will have to see if this is feasible. I think the Space Weather will probably end up being sent as normal messages.

73 de kg5qd Dale

---

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---

## 60. [aprsspec] Re: Comment:Local Time and Objects

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 6 Oct 1999 11:07:50 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43642-1999.10.06-11.20.03--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> I occurs to me that "Local Time" could be designated with a single character  
> for the time zone- there is something like that already in the database I  
> use to generate NWS maps. My problem with "Local time" is that if you are  
> outside of the "Local Area" you have to know the sending station's  
> position. to decipher the time.

It's worse than that, the edges of time zones aren't straight.

---

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---

## 61. [aprsspec] Re: APRS Version Designators

From: Tim Salo <salo@networkcs.com>  
Date: Wed, 6 Oct 1999 11:22:58 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43643-1999.10.06-11.34.39--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Tue, 5 Oct 1999 18:39:45 -0400 (EDT)  
> From: Bob Bruninga <bruninga@nadn.navy.mil>  
> Subject: [aprsspec] Re: APRS Version Designators  
>  
> Wrong on all counts. The intent is to identify the code source and  
> version of a packet for troubleshooting. With everyone and his brother  
> now in the game, this is even more important than ever.

Oh... (although appearances \_are\_ important in this matter).

I don't find the software version of the sending station a particularly useful protocol construct, but I suspect that this reflects differences in protocol implementation philosophies. I think some examples of how you have used this field would be enlightening.

I started crafting a much longer reply, but my short answer is that I believe that it is the responsibility of the receiver to process \_any\_ malformed packet without blowing up. I believe that this is the only approach that will work in the evolving APRS environment, particularly given:

- o the move to an open APRS development community where presumably many new, uncoordinated APRS implementation will emerge, and
- o the emphasis placed on APRS as emergency communications tool.

Among other effects, this receiver-validates-all-packets approach removes the need to quickly find the originator of malformed packets. Rather, the immediate response to software blowing up in response to received packets is to release a corrected version of the receiving software that silently ignores the malformed packet, rather than blowing up. Therefore, knowledge of the sending software version is a less pressing need.

I recognize that you are developing in a environment with only a limited amount of memory, that you like to add new features, and that you have

chosen a monolithic software model (one program does everything). I also realize that at times these objectives conflict with the inclusion of extensive error checking of received packets. I guess I don't have much of a recommendation beyond observing that I believe that extensive validation of received packets is the only approach that scales into the future.

It would probably also be useful if I got around to sending e-mail about the lessons learned about ensuring interoperability and robustness in the Internet, (since I think these are the issues you are trying to address with the sender software version identification.)

By the way, what would be really useful is to include the APRS protocol version number in the packet. But, that too is the topic for another e-mail message.

-tjs

---

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---

## 62. [aprsspec] Re: APRS Objects

From: Tim Salo <salo@networkcs.com>  
Date: Wed, 6 Oct 1999 11:30:29 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43645-1999.10.06-11.42.10--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Tue, 05 Oct 1999 19:24:05 -0400  
> From: Wes Johnston <kd4rdb@netzero.com>  
> Subject: [aprsspec] APRS Objects  
> [...]  
> 1) We need a 2nd level of objects that can ONLY be created and modified by  
> "official" stations, such as SKYWARN stations. General users should be  
> able to create objects as usual and move them around.  
> [...]

I believe that the most appropriate technology to address this need is cryptographic authentication. That is, the originator might cryptographically "sign" an APRS message. The receiver could then, if and when desired, verify the signature on the message in order to verify the identity of the sender.

This sounds like a good master's thesis for someone...

-tjs

---

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## 63. [aprsspec] Re: APRS Objects

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 6 Oct 1999 11:35:47 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43647-1999.10.06-11.48.40--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> I believe that the most appropriate technology to address this need is  
> cryptographic authentication. That is, the originator might  
> cryptographically "sign" an APRS message. The receiver could then,  
> if and when desired, verify the signature on the message in order to  
> verify the identity of the sender.

This would introduce a module of "secret code" that would really interfere with portability. I'm having trouble imagining a cryptographic approach that would allow open source on the algorithm, and knowledge of what's being encoded, and still be secure.

---

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---

## 64. [aprsspec] Re: APRS Objects



From: Tim Salo <salo@networkcs.com>  
Date: Wed, 6 Oct 1999 12:05:19 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43650-1999.10.06-12.17.03--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: "Dave VanHorn" <dvanhorn@cedar.net>  
> Subject: [aprsspec] Re: APRS Objects  
> Date: Wed, 6 Oct 1999 11:35:47 -0500  
>  
> > I believe that the most appropriate technology to address this need is  
> > cryptographic authentication. That is, the originator might  
> > cryptographically "sign" an APRS message. The receiver could then,  
> > if and when desired, verify the signature on the message in order to  
> > verify the identity of the sender.  
>  
> This would introduce a module of "secret code" that would really interfere  
> with portability. I'm having trouble imagining a cryptographic approach  
> that would allow open source on the algorithm, and knowledge of what's being  
> encoded, and still be secure.

I recommend a solution based on public key cryptography and digital signatures. The algorithms are public, and I believe that quite a bit of code is available for the algorithms. The missing piece is the public key of the entity signing the messages. This could be received from a trusted online source, such as an APRServe (but, you might want to authenticate the identity of the APRServe...) or a set of public keys could be distributed with APRS software or via the Web.

One source of info about public key cryptography is the RSA FAQ:

<http://www.rsasecurity.com/rsalabs/faq/>

Note that some languages include support for these services:

<http://www.java.sun.com/products/jce/index.html>

This is a complicated area, but the science needs to be understood by only a very small number of APRS developers (one might be enough). There are lots of issues, such as selecting the appropriate algorithm, designing a key distribution mechanism, and avoiding the Export Control Act, (cryptography is a munition). Given a design, most developers should be able to implement the functionality.

This feature would probably be optional. Some implementations may choose to not implement digital signatures and therefore implicitly assume that all messages originate from valid sources.

-tjs

---

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---

## 65. [aprsspec] Re: APRS Objects

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 6 Oct 1999 12:09:34 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43652-1999.10.06-12.21.45--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> I recommend a solution based on public key cryptography and digital  
> signatures. The algorithms are public, and I believe that quite a bit  
> of code is available for the algorithms. The missing piece is the  
> public key of the entity signing the messages. This could be received  
> from a trusted online source, such as an APRServe (but, you might want  
> to authenticate the identity of the APRServe...) or a set of public  
> keys could be distributed with APRS software or via the Web.

This is a "big computer" job. I admit my bias here, I'd like to stay with what can reasonably be achieved in a microcontroller. All we NEED here is authentication, not encryption. It's a crime to use someone else's callsign, so I think we already have the needed mechanism. If someone starts bootlegging calls and screwing around with objects, then folks like me need to start hunting his ass. (DF gear on standby 24/7)

---

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## 66. [aprsspec] Re: APRS Objects

From: Tim Salo <salo@networkcs.com>  
Date: Wed, 6 Oct 1999 12:39:21 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43655-1999.10.06-12.51.05--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: "Dave VanHorn" <dvanhorn@cedar.net>  
> To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
> Subject: [aprsspec] Re: APRS Objects  
> Date: Wed, 6 Oct 1999 12:09:34 -0500  
>  
> > I recommend a solution based on public key cryptography and digital  
> > signatures. The algorithms are public, and I believe that quite a bit  
> > of code is available for the algorithms. The missing piece is the  
> > public key of the entity signing the messages. This could be received  
> > from a trusted online source, such as an APRServe (but, you might want  
> > to authenticate the identity of the APRServe...) or a set of public  
> > keys could be distributed with APRS software or via the Web.  
>  
> This is a "big computer" job. I admit my bias here, I'd like to stay with  
> what can reasonably be achieved in a microcontroller.

Gosh. A ring on my finger can do this  
(<http://www.ibutton.com/ibuttons/index.html>). So can a card in my wallet  
(<http://java.sun.com/products/javacard/index.html>)

> All we NEED here is authentication, not encryption.

I am suggesting authentication based on cryptography, not encryption.  
The APRS message would still be in clear text; it would merely have  
some junk (a digital signature) appended to the end.

-tjs

---

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## 67. [aprsspec] Re: APRS Objects

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 6 Oct 1999 12:55:10 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43656-1999.10.06-13.07.21--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Gosh. A ring on my finger can do this  
> (<http://www.ibutton.com/ibuttons/index.html>). So can a card in my wallet  
> (<http://java.sun.com/products/javacard/index.html>)

But we will also be busy doing OTHER things, like APRS.

> > All we NEED here is authentication, not encryption.  
>

> I am suggesting authentication based on cryptography, not encryption.  
> The APRS message would still be in clear text; it would merely have  
> some junk (a digital signature) appended to the end.

I get the difference, and I wasn't thinking you meant encrypted packets.  
The "junk" still has to be generated for each packet.  
If the "junk" is the same on each packet, then joe nasty can just copy my  
"junk".  
Still, all we need is to authenticate the sender.

---

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---

## 68. [aprsspec] Re: APRS Version Designators

From: "Rob Wittner" <rmw@rwa-inc.com>  
Date: Wed, 6 Oct 1999 14:08:11 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43657-1999.10.06-13.19.42--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> > Wrong on all counts. The intent is to identify the code source and  
> > version of a packet for troubleshooting. With everyone and his brother  
> > now in the game, this is even more important than ever.

> I don't find the software version of the sending station a particularly  
> useful protocol construct, but I suspect that this reflects differences  
> in protocol implementation philosophies. I think some examples of how  
> you have used this field would be enlightening.

and

> I started crafting a much longer reply, but my short answer is that  
> I believe that it is the responsibility of the receiver to process  
> \_any\_ malformed packet without blowing up. I believe that this is the  
> only approach that will work in the evolving APRS environment,  
> particularly given:

Being a recent addition to the fold of "APRS Developers", I can assure you that it's every author's intent to parse what packets they can, and discard the rest without any undue explosions. There is quite a bit of code in APRS/CE that does range-checking and other "sanity" checks on values within packets before handing them off for further processing.

I think the "version-in-the-TOCALL" concept does two things:

(1) If you happen to find a malformed packet (whether or not it blows up a given receiving station is a totally separate matter), it allows you to determine the platform and version of the software that is sending said packet. Who cares? The author, for sure! If someone gets a bogus packet with a TOCALL of AP101, they can send me an e-mail and a copy of the packet. Then I have a record and can start tracking it down if I am not aware of the problem already. If we all used a generic TOCALL of "APRS", or something like it, then the operator of the station has to be contacted and queried about what version of APRS they're using, on what platform, etc.

(2) It allows the receiver to know what the capabilities of the sending station are. Does the station have messaging capability? Will it understand this packet I'm about to send with a protocol change in it? Does it have a small screen, so I may want to break this message up into shorter segments? (Especially true with the D7, which sends messages and ACKs to AP001 by default. Win- & MacAPRS take advantage of this, breaking a message up into much shorter lines when sending to a D7.)

I think these types of things drove the design of the protocol, not a desire to have absolute control over who writes what software.

73

-Rob  
KZ5RW  
APRS/CE - APRS for Windows CE handhelds... coming soon to an  
ftp.tapr.org near you!

-----Original Message-----

From: bounce-aprsspec-11697@lists.tapr.org  
[mailto:bounce-aprsspec-11697@lists.tapr.org] On Behalf Of Tim Salo  
Sent: Wednesday, October 06, 1999 12:23 PM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Re: APRS Version Designators

> Date: Tue, 5 Oct 1999 18:39:45 -0400 (EDT)  
> From: Bob Bruninga <bruninga@nadn.navy.mil>  
> Subject: [aprsspec] Re: APRS Version Designators  
>  
> Wrong on all counts. The intent is to identify the code source and  
> version of a packet for troubleshooting. With everyone and his brother  
> now in the game, this is even more important than ever.

Oh... (although appearances \_are\_ important in this matter).

I don't find the software version of the sending station a particularly useful protocol construct, but I suspect that this reflects differences

in protocol implementation philosophies. I think some examples of how you have used this field would be enlightening.

I started crafting a much longer reply, but my short answer is that I believe that it is the responsibility of the receiver to process \_any\_ malformed packet without blowing up. I believe that this is the only approach that will work in the evolving APRS environment, particularly given:

<SNIP>

---

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## 69. [aprsspec] Re: APRS Objects

From: "Neil Johnson" <njohnson@interl.net>  
Date: Wed, 6 Oct 1999 13:18:23 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43660-1999.10.06-13.30.14--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Here's the nickel tour of public cryptography.

The NWS generates two keys that are mathematically related. Anything encrypted with one key can ONLY be decrypted by the other key (and vice versa). Due to the algorithm it's almost impossible to determine one key from the other (with out spending thousands of years of computer time).

The NWS keeps one key private and publishes the other. This published key is incorporated into the APRS programs.

When the NWS sends a warning via APRS, They pass the message through another function called a cryptographic hash. This generates a hash code which is similar to checksum, but due to the algorithm used can be guaranteed to be unique to the message.

They then encrypt the hash code with the private key, append it to the message and send it out to APRS.

The receiving program, if it wants to confirm the message, decrypts the hash code using the published key.  
(Confirming that it is from the NWS because it could only have been encrypted with their private key). Runs the message through the same hash function and compares this hash code to the decrypted one. If they match, The program knows 1) The message definitely came from the NWS, and 2) it was not altered in anyway.

A program that didn't care about confirming could just ignore the encrypted hash code.

-Neil Johnson

-----Original Message-----

From: Dave VanHorn <dvanhorn@cedar.net>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Date: Wednesday, October 06, 1999 12:55 PM  
Subject: [aprsspec] Re: APRS Objects

>  
>> Gosh. A ring on my finger can do this  
>> (<http://www.ibutton.com/ibuttons/index.html>). So can a card in my wallet  
>> (<http://java.sun.com/products/javacard/index.html>)  
>  
>But we will also be busy doing OTHER things, like APRS.  
>  
>  
>> > All we NEED here is authentication, not encryption.  
>>  
>> I am suggesting authentication based on cryptography, not encryption.  
>> The APRS message would still be in clear text; it would merely have  
>> some junk (a digital signature) appended to the end.  
>  
>I get the difference, and I wasn't thinking you meant encrypted packets.  
>The "junk" still has to be generated for each packet.  
>If the "junk" is the same on each packet, then joe nasty can just copy my

>"junk".  
>Still, all we need is to authenticate the sender.  
>  
>  
>  
>---  
>You are currently subscribed to aprsspec as: njohnson@interl.net  
>To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapir.org  
>  
  
---  
You are currently subscribed to aprsspec as: wd5ivd@tapir.org  
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapir.org

---

## 70. [aprsspec] Re: APRS Objects

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 6 Oct 1999 13:34:27 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11594-43661-1999.10.06-13.46.40--wd5ivd#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

> The NWS keeps one key private and publishes the other. This published key  
is  
> incorporated into the APRS programs.

Is the intent that ONLY NWS be able to use this? That does simplify things  
a little.  
For ex, I would never have to generate this mess, only untangle it.

> The receiving program, if it wants to confirm the message, decrypts the  
hash  
> code using the published key.

And this takes how long in an 8 bit machine, and how much ram?

Could this not be solved by using a mechanism like the registration key in  
WAPRS?  
Just prevent packets "from NWS" from being sent unless the software is  
unlocked.  
I can incorporate that as well in a microcontroller based device, in that I  
can disallow that field to equal a particular string, unless I (the author)  
know the user is valid, and I provide him an unlock code keyed to his  
callsign. Now there is no global dependency on a particular encryption  
mechanism. The unlock code won't work for anyone else unless they want to  
pirate someone's call, which is of course illegal, and I think we'd see some  
enforcement action from the FCC.

What I'm asking for is some consideration of platforms that don't have "put  
in another 32meg of ram" as an option. I know it's easy to solve the  
problem in big machines, but that leaves little machines out in the cold.

> A program that didn't care about confirming could just ignore the  
encrypted  
> hash code.

Given.

---  
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---

## 71. [aprsspec] Re: APRS Objects

From: Jeff King <jeff@home.nuge.com>  
Date: Wed, 6 Oct 1999 17:38:05 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11594-43682-1999.10.06-16.49.41--wd5ivd#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Wed, 6 Oct 1999, Dave VanHorn wrote:

> > I am suggesting authentication based on cryptography, not encryption.  
> > The APRS message would still be in clear text; it would merely have  
> > some junk (a digital signature) appended to the end.  
>  
> I get the difference, and I wasn't thinking you meant encrypted packets.

> The "junk" still has to be generated for each packet.  
> If the "junk" is the same on each packet, then joe nasty can just copy my  
> "junk".

Look at rolling codes as used in RKE devices. MicroChip has a line of parts that can do this and some ap notes on the subject. These signatures can be sent in the open as they are different on every transmission.

-Jeff

---

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---

## 72. [aprsspec] BNF and APRS Protocol Documentation

From: "Douglas Quagliana" <dquagliana@hotmail.com>  
Date: Wed, 06 Oct 1999 16:35:48 PDT  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43694-1999.10.06-18.47.33--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Gang,

Re: the APRS protocol documentation 1.0 Draft

Well, actually, I was really hoping for a BNF diagram of the APRS protocol. I'm willing to write it.

Backus-Naur Form is a formal meta-language commonly used to diagram all possible constructs in a programming language, command language, or a protocol.

A portion of the BNF for APRS might look something like this (this is just off the top of my head...)

```
<APRS-packet> ::= <Packet-path> ":" <Data-part> <EndOfLine>
<Packet-path> ::= <From-Call> ">" <To-Call> [ <Digilist> ]
<Digilist>    ::= [ ",", <Digipeater> ] <Digilist>
<To-Call>     ::= "APRS" | "AP" <APIdentifier> <Version> | "GPS"
<Data-part>   ::= <GridSquare> | <WeatherData> | <GPSTString>
<GPSTString>  ::= <GPRMCString> | <GPGGAStrng> | <GPGLLString>
<GPGLLString> ::= "$GPGLL" ",", <Latitude> ",", <NorthSouth> ",",
                        <Longitude> ",", <EastWest> ",", <Checksum>
```

and so on...

where "x" is the presence of the thing x,  
"[ something ]" indicates an optional occurrence of  
the thing /something/ and "this | that" indicates the presence  
of either the thing /this/ or the presence of the thing /that/.

Obviously the real BNF for the APRS protocol will be somewhat longer and contain many more fields, but this should give you a feel for the notation and hopefully why I think it is important to have something like a BNF diagram for the whole protocol.

If I was an APRS developer and I had to write a parser for APRS packets I'd \*really\* want to have a BNF diagram to follow. This ensures that you know all the possibilities of which "things" can occur and in what different order(s) they are allowed. It guides everyone so that they're all following the exact same "language" and provides some structure for your source code to follow. It also lets you easily construct a set of test cases to cover the whole protocol as documented. You can use the BNF to immediately determine whether or not a particular packet is conforming to the specs. It's much more formal and much less ambiguous than just saying that the following are some valid examples.

This will be much more important if we suddenly have many new APRS authors.

I think a BNF for the APRS protocol would be a very good thing to have.

I'm willing to write up the BNF for the APRS protocol.

Just my \$0.02,

Douglas KA2UPW  
dquagliana@hotmail.com

---

Get Your Private, Free Email at <http://www.hotmail.com>

---

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To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

---

### 73. [aprsspec] Re: BNF and APRS Protocol Documentation

From: amartin@interactive.net (Art Martin)  
Date: Wed, 06 Oct 1999 20:26:42 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43700-1999.10.06-19.38.19--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Thanks for reminding me, Doug...

As I recall, the rules for the Packet BBS programs were also defined in BNF-like format. A very good suggestion for the protocol description. I hope the Working Group will agree.

TNX and 73 de Art

--

Douglas Quagliana wrote:

```
>
> Gang,
>
> Re: the APRS protocol documentation 1.0 Draft
>
> Well, actually, I was really hoping for a BNF diagram of the
> APRS protocol. I'm willing to write it.
>
> Backus-Naur Form is a formal meta-language commonly used
> to diagram all possible constructs in a programming language,
> command language, or a protocol.
>
> A portion of the BNF for APRS might look something like this
> (this is just off the top of my head...)
>
> <APRS-packet> ::= <Packet-path> ":" <Data-part> <EndOfLine>
> <Packet-path> ::= <From-Call> ">" <To-Call> [ <DigiList> ]
> <DigiList> ::= [ ",", <Digipeater> ] <DigiList>
> <To-Call> ::= "APRS" | "AP" <APIdentifier> <Version> | "GPS"
> <Data-part> ::= <GridSquare> | <WeatherData> | <GPSSString>
> <GPSSString> ::= <GPRMCString> | <GPGGAStrng> | <GPGLLString>
> <GPGLLString> ::= "$GPGLL" ",", <Latitude> ",", <NorthSouth> ",",
> <Longitude> ",", <EastWest> ",", <Checksum>
> and so on...
>
> where "x" is the presence of the thing x,
> "[ something ]" indicates an optional occurrence of
> the thing /something/ and "this | that" indicates the presence
> of either the thing /this/ or the presence of the thing /that/.
>
> Obviously the real BNF for the APRS protocol will be
> somewhat longer and contain many more fields, but this
> should give you a feel for the notation and hopefully
> why I think it is important to have something like a
> BNF diagram for the whole protocol.
>
> If I was an APRS developer and I had to write a
> parser for APRS packets I'd *really* want to have
> a BNF diagram to follow. This ensures that you
> know all the possibilities of which "things" can
> occur and in what different order(s) they are
> allowed. It guides everyone so that they're
> all following the exact same "language" and
> provides some structure for your source code
```

> to follow. It also lets you easily construct a  
> set of test cases to cover the whole protocol  
> as documented. You can use the BNF to  
> immediately determine whether or not a particular  
> packet is conforming to the specs. It's much  
> more formal and much less ambiguous than just saying  
> that the following are some valid examples.  
>  
> This will be much more important if we suddenly  
> have many new APRS authors.  
>  
> I think a BNF for the APRS protocol would be  
> a very good thing to have.  
>  
> I'm willing to write up the BNF for the APRS protocol.  
>  
> Just my \$0.02,  
>  
> Douglas KA2UPW  
> dquagliana@hotmail.com  
>  
> \_\_\_\_\_  
> Get Your Private, Free Email at <http://www.hotmail.com>  
>  
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--  
Art Martin N2QAE  
Long Valley, Morris County, NJ, USA  
<mailto:amartin@interactive.net>  
Find me at: <http://map.aprs.net:8000/n2qae>  
--

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---

## 74. [aprsspec] Re: APRS Objects

From: Wes Johnston <[kd4rdb@netzero.com](mailto:kd4rdb@netzero.com)>  
Date: Wed, 06 Oct 1999 20:29:55 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapir.org](mailto:aprsspec@lists.tapir.org)>  
Message-ID: <[LYR11594-43702-1999.10.06-19.41.55--wd5ivd#tapir.org@lists.tapir.org](mailto:LYR11594-43702-1999.10.06-19.41.55--wd5ivd#tapir.org@lists.tapir.org)>  
Rendered body type: multipart/alternative

[No readable text body. See the preserved original monthly archive.]  
[Inline non-text content: multipart/alternative; 3,706 bytes]

---

## 75. [aprsspec] Re: BNF and APRS Protocol Documentation

From: smorris@mindspring.com  
Date: Wed, 6 Oct 1999 21:00:57 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapir.org](mailto:aprsspec@lists.tapir.org)>  
Message-ID: <[LYR11594-43707-1999.10.06-20.10.48--wd5ivd#tapir.org@lists.tapir.org](mailto:LYR11594-43707-1999.10.06-20.10.48--wd5ivd#tapir.org@lists.tapir.org)>  
Rendered body type: text/plain

Actually what would be even better is the block diagram that you see other network protocols formatted in. Take a look at some network protocol books, that use a line diagram (blocks end to end) with the length, what the bits/bytes are for, etc.

Scott  
----- Original Message -----  
From: Douglas Quagliana <[dquagliana@hotmail.com](mailto:dquagliana@hotmail.com)>  
To: APRS Spec Discussion List <[aprsspec@lists.tapir.org](mailto:aprsspec@lists.tapir.org)>  
Sent: Wednesday, October 06, 1999 7:35 PM  
Subject: [aprsspec] BNF and APRS Protocol Documentation

> Gang,  
>  
> Re: the APRS protocol documentation 1.0 Draft  
>  
> Well, actually, I was really hoping for a BNF diagram of the  
> APRS protocol. I'm willing to write it.  
>  
> Backus-Naur Form is a formal meta-language commonly used  
> to diagram all possible constructs in a programming language,  
> command language, or a protocol.



```

>
> A portion of the BNF for APRS might look something like this
> (this is just off the top of my head...)
>
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> <Packet-path> ::= <From-Call> ">" <To-Call> [ <DigiList> ]
> <DigiList> ::= [ ",", <Digipeater> ] <DigiList>
> <To-Call> ::= "APRS" | "AP" <APIIdentifier> <Version> | "GPS"
> <Data-part> ::= <GridSquare> | <WeatherData> | <GPSSString>
> <GPSSString> ::= <GPRMCString> | <GPGGAStrng> | <GPGLLString>
> <GPGLLString> ::= "$GPGLL" ",", <Latitude> ",", <NorthSouth> ",",
> <Longitude> ",", <EastWest> ",", <Checksum>
> and so on...
>
> where "x" is the presence of the thing x,
> "[ something ]" indicates an optional occurrence of
> the thing /something/ and "this | that" indicates the presence
> of either the thing /this/ or the presence of the thing /that/.
>
> Obviously the real BNF for the APRS protocol will be
> somewhat longer and contain many more fields, but this
> should give you a feel for the notation and hopefully
> why I think it is important to have something like a
> BNF diagram for the whole protocol.
>
> If I was an APRS developer and I had to write a
> parser for APRS packets I'd *really* want to have
> a BNF diagram to follow. This ensures that you
> know all the possibilities of which "things" can
> occur and in what different order(s) they are
> allowed. It guides everyone so that they're
> all following the exact same "language" and
> provides some structure for your source code
> to follow. It also lets you easily construct a
> set of test cases to cover the whole protocol
> as documented. You can use the BNF to
> immediately determine whether or not a particular
> packet is conforming to the specs. It's much
> more formal and much less ambiguous than just saying
> that the following are some valid examples.
>
> This will be much more important if we suddenly
> have many new APRS authors.
>
> I think a BNF for the APRS protocol would be
> a very good thing to have.
>
> I'm willing to write up the BNF for the APRS protocol.
>
> Just my $0.02,
>
> Douglas KA2UPW
> dquagliana@hotmail.com
>
> _____
> Get Your Private, Free Email at http://www.hotmail.com
>
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>
>
> ---
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```

## 76. [aprsspec] BNF vs Block vs other

```

From: Keith Sproul <ksproul@vger.rutgers.edu>
Date: Wed, 6 Oct 1999 21:41:13 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11594-43715-1999.10.06-20.54.14--wd5ivd#tapir.org@lists.tapir.org>
Rendered body type: text/plain

```

For the moment, the protocol will NOT be in BNF!!!

I thought the idea was to make a document that the 'AVERAGE' person could read it, not just people with a degree in Computer Science.

I agree with the block formats for some stuff, but instead of being PICKY, lets make sure it gets COMPLETE.. and is CLEAR (no ambiguities)

The comments about stuff that was either missing, incomplete or unclear have been very good, and I will be implementing them into a new version in the near future. (End of October or earlier, I hope).

I -WAS- happy with the way stuff was going on on this SIG, but I don't want to be 'picked' to death just because one person wants to see it done THEIR way and somebody else wants it done differently.

It is going to be a reasonable amount of work going thru all of the email and making sure I have EVERY update/change etc included. I already have approaching 100 messages about the SPEC..

Some people have been making suggestions about NEW stuff, this is all fine and good, but it will slow the process down. If you want to make suggestions/comments about new things, please either wait, OR put  
NEW SUGGESTION in the subject so it can be put off to the side until we get the CURRENT stuff fully documented.

Keith Sproul  
Keith Sproul 732 445-3695 Office  
Student Housing Network Coordinator 732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/ WU2Z

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---

## 77. [aprsspec] Re: BNF and APRS Protocol Documentation

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Wed, 6 Oct 1999 22:56:19 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43725-1999.10.06-22.08.05--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

By the way, My lack of comment on the protocol spec is simply because of unbelievable demands on my time from work, DCC, AMSAT conference, Kenwood, Schhool, and new job. In a week or two I hope to roll up my sleeves and dig in... :-) Leaving for AMSAT conf in 8 hours...

de WB4APR, Bob

---

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---

## 78. [aprsspec] Re: BNF and APRS Protocol Documentation

From: Tim Salo <salo@networkcs.com>  
Date: Wed, 6 Oct 1999 23:40:32 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43742-1999.10.06-23.52.19--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: "Douglas Quagliana" <dquagliana@hotmail.com>  
> Subject: [aprsspec] BNF and APRS Protocol Documentation  
> Date: Wed, 06 Oct 1999 16:35:48 PDT  
> [...]  
> Well, actually, I was really hoping for a BNF diagram of the  
> APRS protocol. I'm willing to write it.  
> [...]

You may wish to look at Augmented BNF (RFC 2234, "Augmented BNF for Syntax Specifications: ABNF, ftp://ftp.isi.edu/in-notes/rfc2234.txt).

You may find that the sorts of things that you want to specify for an APRS syntax are a bit easier in ABNF. Some might also find the syntax of the rules a bit less intimidating.

I believe that the process of developing an ABNF specification for APRS would be a useful exercise. I suspect that the process will help identify ambiguities in the protocol specification and perhaps even in the protocol itself.

(For what it is worth, somewhere I have ABNF specifications of the TNC-2 and Timewave/AEA MONitor command output formats. About the only interesting thing I learned it that the data stream from the APRServe contains some stuff which isn't exactly either format, (rather, sort of a mush of both formats).)

-tjs

---

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---

## 79. [aprsspec] Re-focus [was:BNF vs Block vs other]

From: PropNET <propnet@greeceny.com>  
Date: Thu, 07 Oct 1999 07:00:52 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43757-1999.10.07-06.13.43--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Focus...Daniel-san. :o)

Keith is right. Let's not forget in our haste that we are focused on only one thing now: clearly documenting (for the masses) what presently \*is\* -- not what would be nice for the future (like the direction of the "objects thread").

There will be plenty of time to discuss both enhancements and reductions to the protocol after we have our baseline publicly defined (in language even eeeeeediods like me can understand).

Thanks for the reminder, Keith.

Ev, W2EV

Keith Sproul wrote:

> For the moment, the protocol will NOT be in BNF!!!  
>  
> I thought the idea was to make a document that the 'AVERAGE' person  
> could read it, not just people with a degree in Computer Science.  
>  
> I agree with the block formats for some stuff, but instead of being  
> PICKY, lets make sure it gets COMPLETE.. and is CLEAR (no ambiguities)  
>  
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> unclear have been very good, and I will be implementing them into a  
> new version in the near future. (End of October or earlier, I hope).  
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> I -WAS- happy with the way stuff was going on on this SIG, but I  
> don't want to be 'picked' to death just because one person wants to  
> see it done THEIR way and somebody else wants it done differently.  
>  
> It is going to be a reasonable amount of work going thru all of the  
> email and making sure I have EVERY update/change etc included. I  
> already have approaching 100 messages about the SPEC..  
>  
> Some people have been making suggestions about NEW stuff, this is all  
> fine and good, but it will slow the process down. If you want to  
> make suggestions/comments about new things, please either wait, OR  
> put  
> NEW SUGGESTION in the subject so it can be put off to the side until  
> we get the CURRENT stuff fully documented.  
>  
> Keith Sproul  
> Keith Sproul 732 445-3695 Office  
> Student Housing Network Coordinator 732 445-2968 Fax  
> mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
> http://dorm.rutgers.edu/~ksproul/ WU2Z  
>  
> ---  
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> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

--

PropNET: an automated network, designed to  
study propagation anomalies. Intreagued?  
<http://www.RochesterNY.org/PropNET>

---

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To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

---

## 80. [aprsspec] RE: APRS Objects

From: "Neil Johnson" <njohnson@interl.net>  
Date: Wed, 6 Oct 1999 21:16:43 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43822-1999.10.07-15.25.50--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Dave,  
I just wanted to explain public-key cryptography. I find it fascinating.

Dave, I agree that adding cryptographic code to APRS would add a lot of complexity. I couldn't imagine try program those algorithms in PIC assembler.

In addition, the U.S. Government considers strong encryption "munitions" just like atomic and biological weapon components. They have rules banning the export of software containing strong encryption to other countries ( you can, however, publish the code in a book and export it because in that form it is protected by the 1st amendment, go figure). The rules are unclear about using it only for authentication.

I think this is a good time to remind everyone that what we are supposed to be doing is finding errors, omissions, and things to be clarified in the proposed protocol spec, NOT attempting to add new functionality at this time.

In the tired clich  of my information technology (IT) friends we are trying to specify the protocol "AS-IS" and not "TO-BE".

I think a BNF description of the protocol would be a good idea, too.

I'll go back and lurk in my corner now.

Neil Johnson  
njohnson@interl.net  
<http://www.interl.net/~njohnson>

---

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---

## 81. [aprsspec] APRS Protocol 1.0 (Draft) comments

From: "Michael J. Allison / KN6ZT" <mallison@livingston.com>  
Date: Thu, 7 Oct 1999 14:12:46 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-43830-1999.10.07-16.22.11--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob, Mark, and Keith

Thanks for the protocol document, it is informative and I've been waiting to see something like for some time.

I am here to add my comments the discussion. Please be aware that I understand how much effort it is to write a specification, so don't take the comments as personal attacks. In fact they are meant to help.

I have sections of comments. 1) is current version of the draft, and 2) general comments on the structure of the document.

----- 1 current comments -----

Page 1. "This draft is for comment on the CURRENT protocol ONLY".  
I don't know how long this document is intended to stick around, but "CURRENT" is ambiguous. Perhaps a date would be better?

Page 1. Include a notice where readers can check for newer

versions of the document. Copies of documents have a life of their own. Someone may pick up an old version and assume it is the newest version (or not be able to find a newer version). Put the URL for the appropriate TAPR page somewhere here (or your website, or what ever).

Page 1. I notice that the document is copyrighted. Please include a statement regarding restrictions of the use of the document. Copyright prevents me from stealing the document and representing it as my own, but does it limit my use of the protocol? What can I write, or not if I refer to the document?

Page 1. You might want to include e-mail contact information for each of you.

Page 3. "Destinations" - the "xxx" for the version number is unclear. Must it be all numeric or are other characters allowed?

Page 4. "Third Part Format". The format character "}" should be quoted in the text. In fact all special characters should be quoted throughout the document. For experimental, what happens when two people in the same area are using Z100? Can I include perhaps the suffix of my call sign to disambiguate? Perhaps I might use something like "Z6ZT" (i.e. Z + KN6ZT)

Page 4. "Time Formats" - "recently only zulu formats are transmitted on the air". This is a historical fact, but what does the protocol now expect? For instance a stronger statement such as "only zulu formats are to be transmitted on the air".

Page 8. "Weather Report" - "The first character indicates what version of APRS". First character of what part of the string? How is version indicated here? "W" means windows, but doesn't tell me if it is WinAPRS 3.2 or 2.0. Should there be a character for manually entered weather information? "See WX.TXT" - where is the file "WX.TXT?" This document needs to be complete to describe the whole protocol. At least provide a reference on the first page, like you did for the other documents.

Page 8. "Mic-Encoder" - An example and packet break out is needed here. I can't tell how things are encoded from the definition, and certainly don't know how to decode it.

Page 12. Queries - "?PATH?" - "not implemented yet" is probably misleading. You are specifying the protocol, not a particular implementation's version of the specification.

Page 13. "First character definitions" - Please include the hexadecimal character values. This makes it unambiguous as to what character of which you speak.

Page 14. "Definitions" - There are many APRS specific terms in the text that should be included here. One example is "net cycle". Net cycle is defined in the design philosophy section. All definitions in the same place make it easier for a reader to find what he is looking for.

Page 15. Item 4. - "APRSdos automatically adjusts its net-cycle..." Instead of calling out the behavior of a conforming implementation it is better to specify how an implementation must deal with this situation. (If that happens to be how APRSdos is written, that's great).

Page 17. "Appendix" change "not used" and "avail" to "reserved for future use" so you have explicitly saved something for the future. This will prevent other developers from usurping these.

Page ????. I think I have missed the telemetry format?

----- 2 General structural comments -----

I understand that the purpose of this document is to a) document the protocol and b) provide a document so that others can use it to develop new tools. Given this I have some comments on the general organization of the document. Again, please don't take these as attacks but rather a bit my twenty years experience reading and writing software specifications. I believe you are trying to write a document that will be valuable for many years to come, and as such the effort you expend now really worth it.

\* Generally items like design philosophy and definition sections come first. This helps the reader get a "feel for the terrain" before jumping into the nitty gritty details. Moving them up front will improve the overall flow of the document very much.

\* There is a great deal of information in the document. I had a hard time wading through it because of organization of like related topics was not apparent to me. A more "outline" type of form will make it very clear to new (and returning) readers how things are related.

For instance something like:

- Design Philosophy
- Definitions
- Notes and restrictions on use of this document
- Implementation
  - Basic AX.25 use - UI frames, etc.
  - Retries
  - Orig call sign use
  - Dest Call sign use
  - etc.
- APRS Message types
  - Position
    - Message format described
    - Position ambiguity
    - PHG
    - etc.
  - Weather
    - Message format described
    - Limitations derived from different weather stations
- Telemetry

Don't take this example literally, it is meant to illustrate a technique, not what you need to do since only you can figure that out.

\* For each description of a message type, include the example in that section. It is much easier to relate an example to the description when they are on the same page. The appendix is too far away (too much page flipping). Additionally for complicated message types and schematic such as that included in the "Power-Height-Gain" format is very useful. The tabular format is fine, but when there are too many elements in a message it is difficult to track between fields and their descriptions. This is a human cognitive issue. Weather report is complicated enough that it could use it.

\* To BNF or not to BNF. I saw an earlier suggestion about adding a BNF format. This is an excellent idea. Another suggestion about using an AX.25 style block notation was also floated. This too is a good idea. When defining protocols such as this you need both diagrams and text. Something that are hard or impossible to explain one way may be described with ease in the other way.

\* Be explicit about what must be interpreted and how. This is useful for determining if an author has written a conforming implementation of the protocol.

\* You should have section discussing, in general, the units used for measurements and values. Because this is pervasive throughout the protocol it is important to be explicit with this? For instance, can a European station build packets in Metric? (I think the answer is "no", but if my only introduction to the protocol was in this document, I might make a mistake).

\* I understand you are trying to write the document so that "average" people can understand it. This is great and means you don't need to use 25 cent words like "state machine" or "isomorphic decomposition". I believe that it is very important to be complete and very explicit when you are shooting for a general audience. If you were writing only for software engineers you might be able to count on them to read between the lines. Since you are writing for people without the experience of those who practice the art of engineering, you need to be more explicit and more detailed (if you have any hope of them making use of the protocol specification).

\* In the DISPLAY Symbols document, it would be most useful to have the actual icons co-located with the codes. You might

include Dos, Win/Mac, SA, etc. I realize this document came from the DOS package and was converted to PDF. It will also look better if both documents are formatted in the same style.

----- eom -----

Well, I'm sure that is enough for now. I look forward to the next iteration. Thanks for the hard work it is appreciated. If you would like any help with this project, please feel free to call on me.

73,  
mike, kn6zt

m/j/a

Michael J. Allison  
Manager, Network Diagnostics  
Access Networks  
Lucent Technologies

---

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---

## 82. [aprsspec] Re: Omission: Internet APRS protocol specification

From: Steve Dimse K4HG <k4hg@tapr.org>  
Date: Fri, 8 Oct 1999 11:36:33 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44065-1999.10.08-11.48.44--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 10/3/99 4:39 PM Jeff King (jeff@aerodata.net) wrote:

>Understand the slipped dates, however paragraph one and three clearly state  
>the internet protocols (e.g.. APRSSERVE) are to be part of this document.  
>

APRServe uses the text output of the TNC, so there is no separate protocol to be documented.

Steve K4HG

---

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---

## 83. [aprsspec] Omissions, Altitude

From: Robert Winingham <kc5ejk@onramp.net>  
Date: Fri, 8 Oct 1999 12:39:56 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44070-1999.10.08-12.51.23--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I don't see the word Altitude or ( /A=xxxxxx ) any where in the specification.

>From one of Bob's DOS text files:

-----  
Altitude is obtained from the string "/A=XXXXXX"  
appearing in any POSIT. Altitude is automatically extracted from the  
standard NMEA GGA sentence or from the special \$PGRMZ and \$PMGLB  
sentences, and or it can be manually entered. Note that the field MUST  
be exactly 6 characters with leading zeros.

Examples from HST log files.

-----  
212029 +212029/3936.80N/10433.12W/090/036/A=031000ft  
  
VE2UMS-11 041133 /041534/4536.95N/07438.45W0/A=004000  
  
W3ADO-7 @241613z3859.83N/07639.91W'131/143/A=001200  
  
-----

I think the default for /A=xxxxxx was to be feet ?

If Kenwood is adding the altitude to the TH-D7a in the next revision  
then how are they sending the altitude in the POSIT packet.

----- kc5ejk@onramp.net or kc5ejk@amsat.org -----

---

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## 84. [aprsspec] Re: Omission: Internet APRS protocol specification

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 08 Oct 1999 14:02:34 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44073-1999.10.08-13.13.40--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Dimse K4HG wrote:

> On 10/3/99 4:39 PM Jeff King (jeff@aerodata.net) wrote:  
>  
> >Understand the slipped dates, however paragraph one and three clearly state  
> >the internet protocols (e.g.. APRSSERVE) are to be part of this document.  
> >  
> APRServe uses the text output of the TNC, so there is no separate  
> protocol to be documented.

Steve:

The purpose of the APRSSPEC, as I understand it, is so someone presently outside of the present authors can develop APRS compatible display and tracking issues. In other words, to make APRS "Open Source".

As APRSSERVE is a integral part of this, it is imperative that it also be documented, as is spelled out in the agreement that the WG, which you are a member of, came to agreement upon.

While you are correct, it does use the "text output" of the TNC, there are other issues that need to be documented. For example, the tcp/ip port numbers that APRSSERVE uses. Also, the messaging token system you are using. Without this information, it would require reverse engineering of APRServe to develop a internet capable "APRS display" application. Weren't we trying to get away for this reverse engineering stuff??

Or look at it another way. You need to write a description, so a programmer with the basic understanding of APRS, can successfully write a APRServe application without to many questions to you. Without the tcp port numbers, as well as the RF messaging authentication, I fail to see how this can be done.

Even if you disagree with the above (which, in my opinion, would go against the spirit of the WG agreement), you still need to document that the APRServe "uses the text output of the TNC" in the APRSSPEC document.

Thanks

Jeff

---

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## 85. [aprsspec] Help with MIC-E Protocol Spec please

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Sat, 9 Oct 1999 12:17:40 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44141-1999.10.09-06.33.43--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I've been reading through the MIC-E protocol spec (Crosswell/Parsons, Jun97/Dec98), and there are a few things I don't understand:

1. I believe Fig 2 shows the destination address encoding \*as it is transmitted\* That is, a protocol analyzer would display the bits as



shown in the diagram. (Correct?)

When the receiving TNC processes this address, it shifts each octet one bit right, and presents the result to the user. [E.g. an ordinary (non-MIC-E) callsign letter "A" (41hex) is transmitted as 82hex, then converted back to 41hex at the receiving end by the TNC].

This leads to my confusion, regarding the ASCII value table containing the "Lat digit, Message/N/W/L Bit = 0" etc columns. I don't understand how this table relates in any way to the transmitted/received data.

To take a real example, the first octet in Fig 2 contains Ar1DDDD0. If message bit A is zero, and DDDD is 0011 (BCD digit "3"), the transmitted bits are 00100110 (=26hex). At the receiving end the TNC shifts the field one bit right, giving 13hex.

My questions, then:

- a. How does 13hex relate to anything in the ASCII value table?
  - b. Does the receiving TNC actually output 13hex for (what it thinks is) a callsign character? (It's a non-printing character).
  - c. Have I missed the point entirely?
2. What is the BCD encoding for a position ambiguity space character?
  3. What are "custom" messages and where is the custom message bit encoded?
  4. The spec says the telemetry field and the comment field are optional, and each field follows mandatory data. I assume this means you can only have \*one\* of these fields at a time, not both.

I assume also that the optional comment field cannot start with 60/27/1D hex (otherwise it would be confused with a telemetry field).

Are these assumptions correct?

Can you help?

73

Ian, G3NRW

--

```
+-----+
| Editor: RSGB's RadCom "Data" column. |
| email: g3nrw@arrl.net |
| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
| |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

---

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---

## 86. [aprsspec] RE: Help with MIC-E Protocol Spec please

From: Bill Diaz <billdiaz@megsinet.net>  
Date: Sat, 09 Oct 1999 07:57:51 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44149-1999.10.09-08.09.51--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ian

The Mic-e documentation is difficult to understand. I hope the following clears up some of your questions.

Bill KC9XG

-----Original Message-----

From: Ian Wade [SMTP:ian@downmain.demon.co.uk]

Sent: Saturday, October 09, 1999 6:18 AM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Help with MIC-E Protocol Spec please

I've been reading through the MIC-E protocol spec (Crosswell/Parsons, Jun97/Dec98), and there are a few things I don't understand:

1. I believe Fig 2 shows the destination address encoding \*as it is transmitted\* That is, a protocol analyzer would display the bits as shown in the diagram. (Correct?)

This is the structure of the data as provided by the TNC to the serial port.

When the receiving TNC processes this address, it shifts each octet one bit right, and presents the result to the user. [E.g. an ordinary (non-MIC-E) callsign letter "A" (41hex) is transmitted as 82hex, then converted back to 41hex at the receiving end by the TNC].

The TNC does not shift the bits. The application receiving the data would perform any bit shifting and masking.

This leads to my confusion, regarding the ASCII value table containing the "Lat digit, Message/N/W/L Bit = 0" etc columns. I don't understand how this table relates in any way to the transmitted/received data.

The data in figure 2 is provided by the TNC as individual ascii bytes. Each byte has been constructed to ensure that it will be a displayable character. The receiving application must extract the data contained in the individual bytes.

"Lat digit, Message/N/W/L Bit = 0"

This refers to .the Most Significant Bits of bytes 4, 5, and 6.  
If the MSB bit of Nr1MMMM0 is a 1 this represents North Latitude  
If the MSB bit of Wr1HHHH0 is a 1 this represents West Longitude  
If the MSB bit of Lr1HHHH0 is a 1, add 100 degrees to longitude

For example : If byte Nr1MMMM0 > 127 then NorthLatitude else SouthLatitude.

To take a real example, the first octet in Fig 2 contains Ar1DDDD0. If message bit A is zero, and DDDD is 0011 (BCD digit "3"), the transmitted bits are 00100110 (=26hex). At the receiving end the TNC shifts the field one bit right, giving 13hex.

My questions, then:

- a. How does 13hex relate to anything in the ASCII value table?
- b. Does the receiving TNC actually output 13hex for (what it thinks is) a callsign character? (It's a non-printing character).
- c. Have I missed the point entirely?

The TNC performs no shifting, therefore the application sees 26Hex.

2. What is the BCD encoding for a position ambiguity space character?

Have not seen this (that I know of), but it should be 0.

3. What are "custom" messages and where is the custom message bit encoded?

4. The spec says the telemetry field and the comment field are optional, and each field follows mandatory data. I assume this means you can only have \*one\* of these fields at a time, not both.

I assume also that the optional comment field cannot start with 60/27/1D hex (otherwise it would be confused with a telemetry field).

Are these assumptions correct?

Can you help?

73  
Ian, G3NRW

```
--
+-----+
| Editor: RSGB's RadCom "Data" column. |
| email: g3nrw@arrl.net |
| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
| |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

```
---
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```

```
---
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To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org
```

## 87. [aprsspec] Mic-e packets

```
From: Bill Diaz <billdiaz@megsinet.net>
Date: Sat, 09 Oct 1999 10:45:44 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-44161-1999.10.09-10.59.09--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

I was connected to N9UUR this morning and observed the following packets.

```
N0JUP-14>RELAY>N0BKB>N0JUP-1>W0MXW-1*>T13W4U:`y<51 k/>EMAIL:COACH1205*HOME
KB0PSS-9*>RELAY>WIDE>T4PQ4X:`x<`l+ak/>ROCHESTER-MN Wiebke_
W3MJP>K3ATI-11*>WIDE>T0PV6T:`g\Xo,5>/>MOBILE
KC4XX>RELAY>WIDE*>R8RW0U:`m1Pl j/>HANKSTER 98ACCORD
```

How are the multiple '>' characters interpreted? Is this a legal construct according to the spec?

The spec states :  
 Mic-Encoder - The Mic-E includes part of its position in the TOCALL.  
 Therefore these need to be decoded by everyone.

Are these Mic-E packets? It appears that the last call in the TO list may be a valid Mic-E location field containing Latitude etc.

```
N0JUP-14>RELAY>N0BKB>N0JUP-1>W0MXW-1*>T13W4U:`y<51 k/>EMAIL:COACH1205*HOME
Decoding this as a Mic-e packet would require decoding the 6 characters
preceding
the ':' character rather than the TO Call as in
KR4YL-7>RWUW3U,K0ZXF-7*,WIDE:`n<4!+E>/>PAUL pk@ij.net
```

```
KC4XX>R8RU5Y/V:`m4*1 j/>HANKSTER 98ACCORD
This packet appears to have 2 extra characters in the To Call.
What is the significance of /V in the To Call?
```

Decoding this packet would require decoding the first 6 characters in the TO CALL and ignoring '/V'. The previous example requires decoding of the 6 characters preceding the ':' character. Certainly is confusing, to me at least.

Bill, KC9XG

```
---
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```

## 88. [aprsspec] Re: [arpp] Help with MIC-E Protocol Spec please

```
From: Ian Wade <ian@dowrmain.demon.co.uk>
Date: Sat, 9 Oct 1999 18:24:47 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-44164-1999.10.09-12.39.58--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
In article <yJFgi0AURy$3Ewac@dowrmain.demon.co.uk>, Ian Wade
<ian@dowrmain.demon.co.uk> writes
>From: Ian Wade <ian@dowrmain.demon.co.uk>
>
>I've been reading through the MIC-E protocol spec (Crosswell/Parsons,
```

>Jun97/Dec98), and there are a few things I don't understand:

Replying to my own post, I see I was completely off the track. I think I've cracked it now, by looking at some on-air traffic. For example, 2 packets from the same station:

```
N2SXJ-1>APK,APS:@091543z3947.23N/07501.98W- ....
N2SXJ-1>S9TW2S,N2SXJ,W3PHL-3,KE3XY-3*,WIDE/1:`gY~l -/>bed station
```

>From the first packet, this station is at 39 deg 47.23 min N,  
75 deg 1.98 min W.

The destination in the second packet is "S9TW2S". Referring to the table in the Mic-E spec, this decodes as follows:

|             |     |     |     |     |     |     |
|-------------|-----|-----|-----|-----|-----|-----|
| ASCII Char: | S   | 9   | T   | W   | 2   | S   |
| Bit:        | A=0 | B=1 | C=0 | N=0 | L=1 | W=0 |
| Lat Digit:  | 3   | 9   | 4   | 7   | 2   | 3   |

The latitude digits match the first packet OK.

According to the spec, the A/B/C bits have to be inverted, so the message code is 101 (i.e. a "Special" message -- I wonder if this is correct?)

The N bit is 0, meaning South .....Hmmm

The L bit is 1, meaning the longitude is greater than 100 degrees ...  
HMMMMMMMMMM

The W bit is 0, meaning East ..... HMMMMMMMMMMMMMMMM

Soooooooo, have I \*still\* got it all wrong, or are the headings on columns 2 and 3 of the ASCII table transposed (i.e. col 2 is for Bit=1 and col 3 is for Bit=0), and should the message bits A/B/C really be inverted?

Also, the table heading refers to "Message/N/W/L" bit settings, whereas Fig 2 shows the octets in the order A/B/C/N/L/W -- i.e. the "W" and "L" are transposed. Which is correct?

Looking at several other continental U.S. Mic-E stations just now, they all appear to be South and East, which I'm disinclined to believe.

Comments anyone, please. I really need to understand this stuff.  
73

Ian, G3NRW

```
--
+-----+
| Editor: R5GB's RadCom "Data" column. |
| email: g3nrw@arrl.net |
| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
| |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

---
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To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

## 89. [aprsspec] Re: [arpp] Help with MIC-E Protocol Spec please

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Sat, 9 Oct 1999 18:50:33 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44166-1999.10.09-13.03.27--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <Bc\$8HoA9r3\$3EwMZ@dowrmain.demon.co.uk>, Ian Wade  
<ian@dowrmain.demon.co.uk> writes  
>

>Replying to my own post, I see I was completely off the track. I think  
>I've cracked it now, by looking at some on-air traffic. For example, 2  
>packets from the same station:  
>

Some more evidence. Two more packets from one station:

```
KR4YL-7>APRS,TCPIP,KA2TOC*:091146z2753.51N/08245.71W>180/041/Mic-E/M0/Off duty
KR4YL-7>RWUR9S,RELAY,WIDE/1:~nIf Sl>/>PAUL pk@ij.net
```

The comment in the first packet says "Off duty". This is message code 0.

In the second packet, the destination is RWUR9S. Decoding the A/B/C bits:

```
ASCII Char:  R      W      U
Bit:         A=0    B=0    C=0
Lat Digit:   2      7      5
```

Inverting A/B/C per the spec, the message code is 7 (Emergency).

So I really \*do\* think the spec is standing on its head.

73

Ian, G3NRW

```
--
+-----+
| Editor: RSGB's RadCom "Data" column. |
| email: g3nrw@arrl.net                 |
| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU      |
|                                         |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

---

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---

## 90. [aprsspec] Re: Omission: Internet APRS protocol specification

```
From: Tim Salo <salo@networkcs.com>
Date: Sun, 10 Oct 1999 01:26:05 -0500 (CDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-44230-1999.10.10-01.37.59--wd5ivd@tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
> Subject: [aprsspec] Re: Omission: Internet APRS protocol specification
> Date: Fri, 8 Oct 1999 11:36:33 -0500
> From: Steve Dimse K4HG <k4hg@tapr.org>
>
> APRServe uses the text output of the TNC, so there is no separate
> protocol to be documented.
```

I am not entirely convinced that this is the case.

I believe that the objective of a protocol specification is to enable the development of interoperable implementations. I don't believe that the APRS protocol specification, as it is currently envisioned, will be adequate to permit the development interoperable APRServe or IGate implementations.

The APRServe/IGate protocol specification might include the following:

- o A brief overview of the APRServe/IGate system
- o A description of the APRServe/IGate protocol (e.g., text strings transported over the telnet protocol)
- o The format of messages forwarded by the APRS/IGate system, which appear to be either in the TNC-2 MONitor command output format or the Timewave/AEA MONitor command output format, (or, some software seems to munge the two formats together in one packet). Somewhere I drafted ABNF descriptions of the TNC-2 and Timewave/AEA MONitor command output formats.
- o The IGate status protocol (identified by the "<" APRS protocol identifier, but listed as "reserved" in the current APRS protocol specification)  
  
    <IGATE MSG\_CNT=nnn LOC\_CNT=nnn FILL\_CNT=nnn
- o APRServe/IGate comments ("#" in the first column of a line)
- o APRServe/IGate port numbers
  - 23
  - 10151
  - 14579

- 1313
- ...
- o A description of the redundant frames that are ignored
- o A description of any MIC-E translations
- o The APRServe/IGate authentication protocol, or at least a hint that one exists
- o A description of the characters that the APRServe/IGate system does and doesn't forward
- o A description of the call signs that the APRServe/IGate system use that don't conform to the AX.25 specification (i.e., calls longer than six characters)
- o Probably a bunch of other stuff I forgot or don't know...

I don't know whether the APRServe/IGate protocols should specified in the APRS protocol specification or in some other document. If it would be useful and if no one else volunteers, I would be happy to write a draft of a APRServe/IGate protocol specification.

-tjs

---

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## 91. [aprsspec] Re: Help with MIC-E Protocol Spec please

From: Tim Salo <salo@networkcs.com>  
Date: Sun, 10 Oct 1999 01:39:19 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44231-1999.10.10-01.51.10--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Sat, 09 Oct 1999 16:39:49 -0500  
> From: Bill Diaz <billdiaz@megsinet.net>  
> Subject: [aprsspec] RE: [arpp] Help with MIC-E Protocol Spec please  
>  
> I have been successfully decoding Mic-e packets via the Internet.  
> Admittedly, there are a few I haven't been able to decode. The packets  
> decoded successfully conform to the Mic-e manual. The ones I haven't decoded  
> are the packets which include multiple '>' characters in the header.  
> [...]

I believe that APRServe pretty much forwards whatever it receives that is close to output from the MONitor command. There are actually two formats: the TNC-2 format (which uses commas) and the Timewave/AEA format (which uses greater-than signs and has the destination call last).

Somewhere, I have ABNF descriptions of both of these formats, which include a few other things like differing uses of asterisks.

I also have a Java AX25Frame class that includes a constructor that creates an object from an APRServe line (i.e., it parses the AX.25 packets received from APRServe).

-tjs

---

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## 92. [aprsspec] Re: Omission: Internet APRS protocol specification

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Sun, 10 Oct 1999 06:55:43 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-44246-1999.10.10-06.11.33--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

You have good points, and this stuff will need to be documented, HOWEVER, it is not part of the On-AIR protocol which is the FIRST thing that we are trying to finalize..

Also, although the stuff you ask about are valid questions, they could vary for Igate implementations, the answers to most of your

questions would be recommendations and not part of a fixed protocol.

In the long run, it probably could/should be part of the same document, however I would like to finish the protocol spec itself first.

Keith Sproul

```
> > Subject: [aprsspec] Re: Omission: Internet APRS protocol specification
> > Date: Fri, 8 Oct 1999 11:36:33 -0500
> > From: Steve Dimse K4HG <k4hg@tapr.org>
> >
> > APRServe uses the text output of the TNC, so there is no separate
> > protocol to be documented.
>
> I am not entirely convinced that this is the case.
>
> I believe that the objective of a protocol specification is to enable the
> development of interoperable implementations. I don't believe that the APRS
> protocol specification, as it is currently envisioned, will be adequate to
> permit the development interoperable APRServe or IGate implementations.
>
> The APRServe/IGate protocol specification might include the following:
>
> o A brief overview of the APRServe/IGate system
>
> o A description of the APRServe/IGate protocol (e.g., text strings
> transported over the telnet protocol)
>
> o The format of messages forwarded by the APRS/IGate system, which appear
> to be either in the TNC-2 MONitor command output format or the
> Timewave/AEA MONitor command output format, (or, some software seems to
> munge the two formats together in one packet). Somewhere I drafted ABNF
> descriptions of the TNC-2 and Timewave/AEA MONitor command output
> formats.
>
> o The IGate status protocol (identified by the "<" APRS protocol
> identifier, but listed as "reserved" in the current APRS protocol
> specification)
>
> <IGATE MSG_CNT=nnn LOC_CNT=nnn FILL_CNT=nnn
>
> o APRServe/IGate comments ("#" in the first column of a line)
>
> o APRServe/IGate port numbers
>
> - 23
> - 10151
> - 14579
> - 1313
> - ...
>
> o A description of the redundant frames that are ignored
>
> o A description of any MIC-E translations
>
> o The APRServe/IGate authentication protocol, or at least a hint that one
> exists
>
> o A description of the characters that the APRServe/IGate system does and
> doesn't forward
>
> o A description of the call signs that the APRServe/IGate system use that
> don't conform to the AX.25 specification (i.e., calls longer than six
> characters)
>
> o Probably a bunch of other stuff I forgot or don't know...
>
> I don't know whether the APRServe/IGate protocols should specified in the
> APRS protocol specification or in some other document. If it would be
> useful and if no one else volunteers, I would be happy to write a draft
> of a APRServe/IGate protocol specification.
>
> -tjs
>
> ---
> You are currently subscribed to aprsspec as: ksproul@vger.rutgers.edu
```





characters (shifted one bit left in the packet at assembly time, just like regular callsign characters), such as in the new table I presented yesterday.

If that's really the case, then APRS and the other packages you listed do \*not\* need to do anything special with \*reporting\* a \*destination address\* with a MONITOR command. True or false?

[I know the same doesn't apply to the Information field, which \*can\* contain non-printable characters, and what you see will depend on what software you're using to read it].

73

Ian, G3NRW

```
--
+-----+
| Editor: RSGB's RadCom "Data" column. |
| email: g3nrw@arrl.net |
| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
| |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

---

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---

## 95. [aprsspec] Re: Help with MIC-E Protocol Spec please

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Sun, 10 Oct 1999 11:00:24 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-44276-1999.10.10-10.13.30--wd5ivd@tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The TO address of an AX25 packet (also called the DESTINATION address) is, (by definition, of the AX25 protocol) EXACTLY 6 characters (each UPPER CASE ONLY or 0-9 ONLY) and an SSID, which is actually a 4 bit field in the actual packet.

Therefore, it MUST be a printable ASCII character and CANNOT be a control character.

What you said is correct. It CANNOT have control characters in the TO/Destination field.

We couldn't change this if we wanted to, it is part of AX25.

Keith

```
>In article <LYR11659-44247-1999.10.10-06.11.48--ian#downmain.demon.co.uk
>@lists.tapr.org>, Keith Sproul <ksproul@vger.rutgers.edu> writes
>
>>The main exception to this is MIC-E packets. APRServe,
>>WinAPRS/MacAPRS and APRS+ all take the Mic-E packet and CONVERT them
>>to 'normal' APRS packets to get rid of the control characters before
>>sending them to the Internet..
>>
>
>Keith, you will have seen my head-scratching over the last couple of
>days about Mic-E. I still need authoritative confirmation from someone
>that the first 6 characters of the Mic-E *destination address* are
>transmitted *ONLY*, repeat *ONLY*, using printable ASCII 0-9/A-L/P-Z
>characters (shifted one bit left in the packet at assembly time, just
>like regular callsign characters), such as in the new table I presented
>yesterday.
>
>If that's really the case, then APRS and the other packages you listed
>do *not* need to do anything special with *reporting* a *destination
>address* with a MONITOR command. True or false?
>
>[I know the same doesn't apply to the Information field, which *can*
>contain non-printable characters, and what you see will depend on what
>software you're using to read it].
>
```

```

>73
>Ian, G3NRW
>--
>+-----+
>| Editor: RSGB's RadCom "Data" column. |
>| email: g3nrw@arrl.net |
>| AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |
>| |
>| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
>| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/aprswg.html |
>+-----+
>
>---
>You are currently subscribed to aprsspec as: ksproul@vger.rutgers.edu
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Keith Sproul 732 445-3695 Office
Student Housing Network Coordinator 732 445-2968 Fax
mailto:ksproul@rci.rutgers.edu 732 821-4828 Home
http://dorm.rutgers.edu/~ksproul/ WU2Z

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```

## 96. [aprsspec] Re: Help with MIC-E Protocol Spec please

```

From: Tim Salo <salo@networkcs.com>
Date: Sun, 10 Oct 1999 10:15:37 -0500 (CDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-44277-1999.10.10-10.27.32--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Date: Sun, 10 Oct 1999 06:58:25 -0400
> From: Keith Sproul <ksproul@vger.rutgers.edu>
> Subject: [aprsspec] Re: Help with MIC-E Protocol Spec please
>
> >I believe that APRServe pretty much forwards whatever it receives that
> >is close to output from the MONitor command. There are actually two
> >formats: the TNC-2 format (which uses commas) and the Timewave/AEA format
> >(which uses greater-than signs and has the destination call last).
>
> The main exception to this is MIC-E packets. APRServe,
> WinAPRS/MacAPRS and APRSa+ all take the Mic-E packet and CONVERT them
> to 'normal' APRS packets to get rid of the control characters before
> sending them to the Internet..
>
> Older versions of WinAPRS/MacAPRS just send the Mic-E packets
> directly, and we need to make an effort to get this stations updated.

I believe we are talking about two different things here. My response
was that anyone wanting to parse the data stream from an APRServe must
be prepared to parse both the TNC-2 MONitor command format outputs

FROMCALL>TOCALL,VIA1,VIA2,...

and the Timewave MONitor command format

FROMCALL>VIA1>VIA2>VIA>...>TOCALL

-tjs

---
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```

## 97. [aprsspec] Re: Help with MIC-E Protocol Spec please

```

From: Keith Sproul <ksproul@vger.rutgers.edu>
Date: Sun, 10 Oct 1999 11:41:27 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11594-44279-1999.10.10-10.54.27--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes, you are correct.. Anyone wanting to parse stuff from the
Servers, MUST be able to handle both..

Anyone wanting to write a program that works with TNCs in general,
must be able to handle both..

```

If someone was using either KISS mode, or writing a program that was ONLY for use with a certain brand of TNC, they would not have to..

We (the Working Group) decided to publish everything in TNC-2 format, and later have a second document that showed all of the variations from different types of TNCs..

Any/all test suites, files etc, will be published in TNC-2 format.

Keith

```
> > Date: Sun, 10 Oct 1999 06:58:25 -0400
> > From: Keith Sproul <ksproul@vger.rutgers.edu>
> > Subject: [aprsspec] Re: Help with MIC-E Protocol Spec please
> >
> > >I believe that APRServe pretty much forwards whatever it receives that
> > >is close to output from the MONitor command. There are actually two
> > >formats: the TNC-2 format (which uses commas) and the Timewave/AEA format
> > >(which uses greater-than signs and has the destination call last).
> >
> > The main exception to this is MIC-E packets. APRServe,
> > WinAPRS/MacAPRS and APRSa+ all take the Mic-E packet and CONVERT them
> > to 'normal' APRS packets to get rid of the control characters before
> > sending them to the Internet..
> >
> > Older versions of WinAPRS/MacAPRS just send the Mic-E packets
> > directly, and we need to make an effort to get this stations updated.
>
> I believe we are talking about two different things here. My response
> was that anyone wanting to parse the data stream from an APRServe must
> be prepared to parse both the TNC-2 MONitor command format outputs
>
> FROMCALL>TOCALL,VIA1,VIA2,...
>
> and the Timewave MONitor command format
>
> FROMCALL>VIA1>VIA2>VIA>...>TOCALL
>
> -tjs
>
> ---
> You are currently subscribed to aprsspec as: ksproul@vger.rutgers.edu
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org
```

|                                     |                     |
|-------------------------------------|---------------------|
| Keith Sproul                        | 732 445-3695 Office |
| Student Housing Network Coordinator | 732 445-2968 Fax    |
| mailto:ksproul@rci.rutgers.edu      | 732 821-4828 Home   |
| http://dorm.rutgers.edu/~ksproul/   | WU2Z                |

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---

## 98. [aprsspec] Re: Mic-e packets

```
From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 11 Oct 1999 09:38:06 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-44394-1999.10.11-08.50.08--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

On Sat, 9 Oct 1999, Bill Diaz wrote:

```
> W3MJP>K3ATI-11*>WIDE>T0PV6T:`g\Xo,5>/>MOBILE
> KC4XX>RELAY>WIDE*>R8RW0U:`m1Pl j/>HANKSTER 98ACCORD
>
> How are the multiple '>' characters interpreted? Is this a legal
> construct according to the spec?
```

There has been an "addition" to the Mic-E implementation by Kenwood to identify the THD7 as separate from other Mic-E's. This is because unlike conventional Mic-E's, the THD7 can send and receive messages. Thus we need to know who is a Mic-E and who is a THD7 on receipt. If the "first" byte of the Mic-E comment field is a ">", then it is a THD7...  
The new Kenwood Mobile will use a "]"... I think...

de WB4APR

---

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## 99. [aprsspec] Re: Help with MIC-E Protocol Spec please

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 11 Oct 1999 10:05:25 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44396-1999.10.11-09.17.22--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The Mic-E TO-ADDRESS is received by any TNC and displayed in the monitor format as uppercase alphabetic and numerals only. I've been on travel 4 days of every week for the last month, DCC, Kenwood, AMSAT and have not had time to get into this in detail...

bob

On Sun, 10 Oct 1999, Ian Wade wrote:

> In article <LYR11659-44247-1999.10.10-06.11.48--ian#downmain.demon.co.uk  
> @lists.tapr.org>, Keith Sproul <ksproul@vger.rutgers.edu> writes  
>  
> >The main exception to this is MIC-E packets. APRServe,  
> >WinAPRS/MacAPRS and APRSa+ all take the Mic-E packet and CONVERT them  
> >to 'normal' APRS packets to get rid of the control characters before  
> >sending them to the Internet..  
> >  
> >  
> Keith, you will have seen my head-scratching over the last couple of  
> days about Mic-E. I still need authoritative confirmation from someone  
> that the first 6 characters of the Mic-E \*destination address\* are  
> transmitted \*ONLY\*, repeat \*ONLY\*, using printable ASCII 0-9/A-L/P-Z  
> characters (shifted one bit left in the packet at assembly time, just  
> like regular callsign characters), such as in the new table I presented  
> yesterday.  
> >  
> If that's really the case, then APRS and the other packages you listed  
> do \*not\* need to do anything special with \*reporting\* a \*destination  
> address\* with a MONITOR command. True or false?  
> >  
> [I know the same doesn't apply to the Information field, which \*can\*  
> contain non-printable characters, and what you see will depend on what  
> software you're using to read it].  
> >  
> 73  
> Ian, G3NRW  
> --  
> +-----+  
> | Editor: RSGB's RadCom "Data" column. |  
> | email: g3nrw@arrl.net |  
> | AX.25: G3NRW @ GB7ZPU.#21.GBR.EU |  
> | |  
> | INTRODUCTION TO APRS: <http://www.netro.co.uk/whitepaper.htm> |  
> | APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/aprswg.html> |  
> +-----+  
> >  
> ---  
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil  
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org  
>  
>

APRSDos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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## 100. [aprsspec] Re: Omission: Internet APRS protocol specification

From: Steve Dimse K4HG <k4hg@tapr.org>  
Date: Tue, 12 Oct 1999 09:26:26 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44573-1999.10.12-08.57.58--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 10/8/99 1:02 PM Jeff King (jeff@aerodata.net) wrote:

>Steve;  
>  
>The purpose of the APRSSPEC, as I understand it, is so someone presently  
>outside of the present authors can develop APRS compatible display and  
>tracking issues. In other words, to make APRS "Open Source".  
>  
>As APRSSERVE is a integral part of this, it is imperative that it also be  
>documented, as is spelled out in the agreement that the WG, which you  
>are a member of, came to agreement upon.  
>  
The is nothing hidden in APRServe, other than the password algorithm. It  
is all documented in my various DCC papers and web site files. The APRS  
WG charter very specifically states that it deals with the protocol  
itself, not the user interface or other related issues. At some point we  
will likely expand the charter to include other topics like the internet  
system and XML spec, but we must be more focused at this time.  
  
>While you are correct, it does use the "text output" of the TNC, there are  
>other issues that need to be documented. For example, the tcp/ip port  
>numbers that APRSSERVE uses.

These are on the web site, and there is no need for another application  
to use the same port numbers in any case.

>Also, the messaging token system you  
>are using.

What do you mean by message token? This is a term the authors have never  
used...

>Without this information, it would require reverse engineering  
>of APRServe to develop a internet capable "APRS display" application.

Wrong. With the APRS protocol spec, you have everything you need to write  
such an application.

>Or look at it another way. You need to write a description, so a programmer  
>with the basic understanding of APRS, can successfully write a APRServe  
>application without to many questions to you. Without the tcp port numbers,  
>as well as the RF messaging authentication, I fail to see how this can be  
>done.  
>

The only thing secret is the actual algorithm for converting a callsign  
to a validation number. This must remain a secret or else there is no  
reason to have it at all, and every IGate operator's license is at risk.  
I have shared it, and will continue to share it, with everyone that  
develops a working application that requires it.

Steve K4HG

---

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## 101. [aprsspec] Re: APRS Objects

From: Tim Salo <salo@networkcs.com>  
Date: Tue, 12 Oct 1999 10:40:00 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44589-1999.10.12-10.52.03--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Wed, 06 Oct 1999 20:29:55 -0400  
> From: Wes Johnston <kd4rdb@netzero.com>  
> Subject: [aprsspec] Re: APRS Objects  
> [...]  
> We could get mired down in public / private keys and all sorts of  
> authorizations... but we already have a system in place... the "secret

> decoder ring" of skywarn. Let's just add a new category of object to the  
> list of things that skywarn can do that normal users can't. When you get  
> right down to it, a hacker could create a skywarn county warning by  
> hand. So what we have is a case where a person could easily study our  
> system and hack it. Most newbies that would create an object don't read  
> the manual, and once they do and understand, they are less apt to cause  
> problems anyway. I just want to make it inconvenient for newbies to make  
> objects... and to allow me to weed out those objects.  
> [...]

Note that the result, if not the objective, of creating a public APRS specification is to foster the development of independent, interoperable implementations of the APRS protocol. In this new environment "secret decoder rings" become a less realistic technique.

I believe that one question that may be useful to answer is: How robust does the APRS protocol need to be in order to meet the stated objectives, such as credibility as a tool for emergency communications? (If you suspect that I don't believe that secret decoder rings are a robust technique for an open protocol, you are correct.)

-tjs

---

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---

## 102. [aprsspec] APICQ

From: "Thomas M. Schaefer" <toms@inconnect.com>  
Date: Wed, 13 Oct 1999 00:04:43 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44729-1999.10.13-01.16.46--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

When I first talked to Bob about the ICQ Server, I mentioned that I was originating messages. At that time, Bob gave me a license to use the server as it did not compete with any existing products. He gave me the ID of APICQX. I noticed in the list that APIXX was reserved for ICOM (future use). There seems to be a conflict here.

If this is the wrong place to correct this, please forgive me as I did not see an email address in the spec.

Tom NY4I

---

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---

## 103. [aprsspec] Re: APICQ

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Wed, 13 Oct 1999 08:02:02 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-44749-1999.10.13-07.19.51--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

This -IS- the correct place for this.. Thank you for bringing it to our attention.

We had 'assigned' 'I' and 'Y' to Icom and Yaesu for the obvious reasons..

Since Icom has not (yet) come out with any data capable radios and we do not know of any on the horizon, it would be easy to just assign them something else, or we could assign you something else.. APQ for example.

In either case, we need to do it soon...

Keith Sproul

>When I first talked to Bob about the ICQ Server, I mentioned that I was  
>originating messages. At that time, Bob gave me a license to use the server  
>as it did not compete with any existing products. He gave me the ID of  
>APICQX. I noticed in the list that APIXX was reserved for ICOM (future use).

|                                     |                     |
|-------------------------------------|---------------------|
| Keith Sproul                        | 732 445-3695 Office |
| Student Housing Network Coordinator | 732 445-2968 Fax    |
| mailto:ksproul@rci.rutgers.edu      | 732 821-4828 Home   |
| http://dorm.rutgers.edu/~ksproul/   | WU2Z                |

> >The purpose of the APRSSPEC, as I understand it, is so someone presently  
> >outside of the present authors can develop APRS compatible display and  
> >tracking issues. In other words, to make APRS "Open Source".  
> >  
> >As APRSSERVE is a integral part of this, it is imperative that it also be  
> >documented, as is spelled out in the agreement that the WG, which you  
> >are a member of, came to agreement upon.  
> >  
> The is nothing hidden in APRServe, other than the password algorithm. It  
> is all documented in my various DCC papers and web site files.

Then we need LINKS to these documents.... The APRSSPEC  
is supposed to be a freestanding reference document. It should include this data

or at least the links so someone not with your knowledge can develop a  
APRS internet linked application.

> The APRS  
> WG charter very specifically states that it deals with the protocol  
> itself, not the user interface or other related issues.

It has nothing to do with user interfaces. We are talking raw  
protocol and specs here. I've already made this clear.

> At some point we  
> will likely expand the charter to include other topics like the internet  
> system and XML spec, but we must be more focused at this time.

The TAPR announcement 2 \*specifically\* states internet  
protocols NOW. Not deferred, not later, not real soon now. Its says  
with the FIRST DRAFT which is the process we are doing now.  
We are not talking about XML, but what is presently being used.

I quote from announcement2.pdf, on page 3, paragraph 1:

>Protocol Committee  
>The APRS Protocol Specification is the formal definition of the data elements  
and  
>message formats used to communicate between APRS devices via wireless or wired  
>(e.g., Internet) connections. It does not include user interface or other  
elements that  
>do not affect the content or format of these interface components.

Then from paragraph 3 it states:

>The Protocol Committee intends to publish Version 1.0 of the APRS Protocol  
>Specification by the end of October 1999. The first draft of the Specification  
will be  
>made available to the amateur radio community by the end of June 1999, and  
>comments will be accepted as defined below.

This may be the key to the disagreement here. Is it your thinking that the  
document is wrong and does not call for the internet specs to be released  
with the first draft, as it seems to state?

> >While you are correct, it does use the "text output" of the TNC, there are  
> >other issues that need to be documented. For example, the tcp/ip port  
> >numbers that APRSSERVE uses.  
>  
> These are on the web site, and there is no need for another application  
> to use the same port numbers in any case.

You've said that to me before, and I've never been able to find them. Even if  
this is true, YOU STILL NEED TO DOCUMENT THEM IN THE  
APRSSPEC. And if your trying to claim server PORT NUMBERS are  
an operational issue, then you should note that APRS operational specs are  
also in the spec. But port numbers are commonly ASSIGNED to specific  
apps, hence it is my claim they are NOT operational issues but SPEC  
issues.

They need to be in APRSSPEC.

> >Without this information, it would require reverse engineering  
> >of APRServe to develop a internet capable "APRS display" application.  
>  
> Wrong. With the APRS protocol spec, you have everything you need to write



> such an application.

Port numbers? Authentication? the process to connect to the server?, the status messages on port 14501? NONE OF IT IS THERE. Its needs to be referenced in the APRSSPEC document.

> >Or look at it another way. You need to write a description, so a programmer  
> >with the basic understanding of APRS, can successfully write a APRServe  
> >application without to many questions to you. Without the tcp port numbers,  
> >as well as the RF messaging authentication, I fail to see how this can be  
> >done.  
> >  
> The only thing secret is the actual algorithm for converting a callsign  
> to a validation number. This must remain a secret or else there is no  
> reason to have it at all, and every IGate operator's license is at risk.

While this may very well be true, the charter of the WG doesn't call for partial disclosure as I read it, it calls for full disclosure. See the next comment.

>  
> I have shared it, and will continue to share it, with everyone that  
> develops a working application that requires it.

Since there appears to be a legitimate reason not to disclose this, then you need to include the above statement and process in the APRSSPEC. In other words, go on record both with the process to obtain the validation number as well as your commitment to do so along with any conditions you may have. And put this in the spec. Also, it might not hurt to put that specific "secret" algorithm in escrow in case something were to happen, and you were unable to provide it, it could still be obtained.

If you still don't agree with me... fine, but lets let the WG make that decision, not you.... I still say there is a OMISSION with regards to this part of the document.

And in closing, I quote Tim Salo's excellent message of Sunday October 10th, to which the WG was silent to. I think the spirit of what he is saying needs to be considered as well as noting he offered to do the work himself. You might consider taking him up on his offer as he clearly has a good handle on things.

73

Jeff

Tim Salo wrote on October 10th, 1999:

> > Subject: [aprsspec] Re: Omission: Internet APRS protocol specification  
> > Date: Fri, 8 Oct 1999 11:36:33 -0500  
> > From: Steve Dimse K4HG <k4hg@tapr.org>  
> >  
> > APRServe uses the text output of the TNC, so there is no separate  
> > protocol to be documented.  
> >  
> I am not entirely convinced that this is the case.  
> >  
> I believe that the objective of a protocol specification is to enable the  
> development of interoperable implementations. I don't believe that the APRS  
> protocol specification, as it is currently envisioned, will be adequate to  
> permit the development interoperable APRServe or IGate implementations.  
> >  
> The APRServe/IGate protocol specification might include the following:  
> >  
> o A brief overview of the APRServe/IGate system  
> >  
> o A description of the APRServe/IGate protocol (e.g., text strings  
> transported over the telnet protocol)  
> >  
> o The format of messages forwarded by the APRS/IGate system, which appear  
> to be either in the TNC-2 MONitor command output format or the  
> Timewave/AEA MONitor command output format, (or, some software seems to  
> munge the two formats together in one packet). Somewhere I drafted ABNF  
> descriptions of the TNC-2 and Timewave/AEA MONitor command output  
> formats.

```

>
> o The IGate status protocol (identified by the "<" APRS protocol
> identifier, but listed as "reserved" in the current APRS protocol
> specification)
>
> <IGATE MSG_CNT=nnn LOC_CNT=nnn FILL_CNT=nnn
>
> o APRServe/IGate comments ("#" in the first column of a line)
>
> o APRServe/IGate port numbers
>
> - 23
> - 10151
> - 14579
> - 1313
> - ...
>
> o A description of the redundant frames that are ignored
>
> o A description of any MIC-E translations
>
> o The APRServe/IGate authentication protocol, or at least a hint that one
> exists
>
> o A description of the characters that the APRServe/IGate system does and
> doesn't forward
>
> o A description of the call signs that the APRServe/IGate system use that
> don't conform to the AX.25 specification (i.e., calls longer than six
> characters)
>
> o Probably a bunch of other stuff I forgot or don't know...

```

---

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## 106. [aprsspec] Re: PROTEST: Internet APRS protocol specification

From: John Ackermann <jra@febo.com>  
 Date: Wed, 13 Oct 1999 21:14:47 -0400  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Cc: Steve Dimse K4HG <k4hg@tapr.org>,  
 APRS Spec Discussion List <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11594-44846-1999.10.13-20.27.13--wd5ivd#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

Jeff, I've noted your request and will make sure that it's included on the list of items for discussion.

However, I think I need to say that the group didn't contemplate that the comment process would include anything like a "protest" and I do not believe that they feel obligated to accede to external requests for formal votes. I suspect that your request will be considered in the same way as the other comments received, and the WG may or may not have a vote on it.

John

-----

In message <38052B20.16D7DB56@aerodata.net>, Jeff King writes:

```

>Steve:
>
>As we apparently disagree on what and even if any internet specific
>spec information needs to be included in the first draft of
>APRSSPEC, I will ask that a PROTEST be entered and refer
>this matter to the WG for vote. The issue in question is what
>actually was agreed upon, in writing, by the WG to provide
>as it relates to internet specifications in the first draft (see my comments
>later for more detail).
>
>John, can you see that this happens? (as well as read along here)
>
>Now some specifics on what you last said.
>
>Steve Dimse K4HG wrote:
>
>> On 10/8/99 1:02 PM Jeff King (jeff@aerodata.net) wrote:
>>
>> >Steve:
>> >

```

>> >The purpose of the APRSSPEC, as I understand it, is so someone presently  
>> >outside of the present authors can develop APRS compatible display and  
>> >tracking issues. In other words, to make APRS "Open Source".  
>> >  
>> >As APRSSERVE is a integral part of this, it is imperative that it also be  
>> >documented, as is spelled out in the agreement that the WG, which you  
>> >are a member of, came to agreement upon.  
>> >  
>> The is nothing hidden in APRServe, other than the password algorithm. It  
>> is all documented in my various DCC papers and web site files.  
>  
>Then we need LINKS to these documents.... The APRSSPEC  
>is supposed to be a freestanding reference document. It should include this da  
>ta  
>  
>or at least the links so someone not with your knowledge can develop a  
>APRS internet linked application.  
>  
>  
>> The APRS  
>> WG charter very specifically states that it deals with the protocol  
>> itself, not the user interface or other related issues.  
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>It has nothing to do with user interfaces. We are talking raw  
>protocol and specs here. I've already made this clear.  
>  
>> At some point we  
>> will likely expand the charter to include other topics like the internet  
>> system and XML spec, but we must be more focused at this time.  
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>The TAPR announcement 2 \*specifically\* states internet  
>protocols NOW. Not deferred, not later, not real soon now. Its says  
>with the FIRST DRAFT which is the process we are doing now.  
>We are not talking about XML, but what is presently being used.  
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>I quote from announcement2.pdf, on page 3, paragraph 1:  
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>>Protocol Committee  
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>>and  
>>message formats used to communicate between APRS devices via wireless or wire  
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>>(e.g., Internet) connections. It does not include user interface or other  
>>elements that  
>>do not affect the content or format of these interface components.  
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>>The Protocol Committee intends to publish Version 1.0 of the APRS Protocol  
>>Specification by the end of October 1999. The first draft of the Specificatio  
>n  
>will be  
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>>comments will be accepted as defined below.  
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>This may be the key to the disagreement here. Is it your thinking that the  
>document is wrong and does not call for the internet specs to be released  
>with the first draft, as it seems to state?  
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>  
>> >While you are correct, it does use the "text output" of the TNC, there are  
>> >other issues that need to be documented. For example, the tcp/ip port  
>> >numbers that APRSSERVE uses.  
>>  
>> These are on the web site, and there is no need for another application  
>> to use the same port numbers in any case.  
>  
>You've said that to me before, and I've never been able to find them. Even if  
>this is true, YOU STILL NEED TO DOCUMENT THEM IN THE  
>APRSSPEC. And if your trying to claim server PORT NUMBERS are  
>an operational issue, then you should note that APRS operational specs are  
>also in the spec. But port numbers are commonly ASSIGNED to specific  
>apps, hence it is my claim they are NOT operational issues but SPEC  
>issues.  
>  
>They need to be in APRSSPEC.  
>  
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>> >Without this information, it would require reverse engineering

>> >of APRServe to develop a internet capable "APRS display" application.  
>>  
>> Wrong. With the APRS protocol spec, you have everything you need to write  
>> such an application.  
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>Port numbers? Authentication? the process to connect to the server?, the  
>status messages on port 14501? NONE OF IT IS THERE. Its needs to be  
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>  
>> >Or look at it another way. You need to write a description, so a programmer  
>> >with the basic understanding of APRS, can successfully write a APRServe  
>> >application without to many questions to you. Without the tcp port numbers,  
>> >as well as the RF messaging authentication, I fail to see how this can be  
>> >done.  
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>> The only thing secret is the actual algorithm for converting a callsign  
>> to a validation number. This must remain a secret or else there is no  
>> reason to have it at all, and every IGate operator's license is at risk.  
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>While this may very well be true, the charter of the WG doesn't call  
>for partial disclosure as I read it, it calls for full disclosure. See the  
>next comment.  
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>>  
>> I have shared it, and will continue to share it, with everyone that  
>> develops a working application that requires it.  
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>Since there appears to be a legitimate reason not to disclose this, then  
>you need to include the above statement and process in the APRSSPEC.  
>In other words, go on record both with the process to obtain the  
>validation number as well as your commitment to do so along with  
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>it, it could still be obtained.  
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>If you still don't agree with me... fine, but lets let the WG make  
>that decision, not you.... I still say there is a OMISSION  
>with regards to this part of the document.  
>  
>And in closing, I quote Tim Salo's excellent message of Sunday  
>October 10th, to which the WG was silent to. I think the spirit  
>of what he is saying needs to be considered as well as noting  
>he offered to do the work himself. You might consider taking  
>him up on his offer as he clearly has a good handle on things.  
>  
>73  
>  
>Jeff  
>  
>  
>  
>Tim Salo wrote on October 10th, 1999:  
>  
>> > Subject: [aprsspec] Re: Omission: Internet APRS protocol specification  
>> > Date: Fri, 8 Oct 1999 11:36:33 -0500  
>> > From: Steve Dimse K4HG <k4hg@tapr.org>  
>> >  
>> > APRServe uses the text output of the TNC, so there is no separate  
>> > protocol to be documented.  
>> >  
>> I am not entirely convinced that this is the case.  
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>> I believe that the objective of a protocol specification is to enable the  
>> development of interoperable implementations. I don't believe that the APRS  
>> protocol specification, as it is currently envisioned, will be adequate to  
>> permit the development interoperable APRServe or IGate implementations.  
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>> transported over the telnet protocol)  
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>> o The format of messages forwarded by the APRS/IGate system, which appear  
>> to be either in the TNC-2 MONitor command output format or the  
>> Timewave/AEA MONitor command output format, (or, some software seems to

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>> munge the two formats together in one packet). Somewhere I drafted ABN
>F
>> descriptions of the TNC-2 and Timewave/AEA MONitor command output
>> formats.
>>
>> o The IGate status protocol (identified by the "<" APRS protocol
>> identifier, but listed as "reserved" in the current APRS protocol
>> specification)
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>> - 10151
>> - 14579
>> - 1313
>> - ...
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>> o A description of the redundant frames that are ignored
>>
>> o A description of any MIC-E translations
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>> o A description of the characters that the APRServe/IGate system does and
>> doesn't forward
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>> o A description of the call signs that the APRServe/IGate system use that
>> don't conform to the AX.25 specification (i.e., calls longer than six
>> characters)
>>
>> o Probably a bunch of other stuff I forgot or don't know...

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```

## 107. [aprsspec] Re: PROTEST: Internet APRS protocol specification

```

From: Jeff King <jeff@aerodata.net>
Date: Wed, 13 Oct 1999 21:44:35 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>,
    Steve Dimse K4HG <k4hg@tapr.org>
Message-ID: <LYR11594-44849-1999.10.13-20.56.37--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

John Ackermann wrote:

```

> However, I think I need to say that the group didn't contemplate that
> the comment process would include anything like a "protest" and I do not
> believe that they feel obligated to accede to external requests for formal
> votes.

```

Understood. But the question here is does the WG feel obligated to comply with written agreements they all(?) agreed to? This is a serious issue and what my "PROTEST" was meant to address.

What is your reading of the agreement? Should internet specs be released with the first draft, as apparently is stated in announcement2.pdf? We have had two or three non-WG people say yes, they should be, and one WG member say no, they will not be. What do you think?

And what really is the true spirit of the APRSSPEC? Mumbo jumbo or something that really can be useful to a third party developer? This is the root issue, and the one I hope the WG set out to resolve.

Thanks

-Jeff

```

> >>
> >> I believe that the objective of a protocol specification is to enable the
> >> development of interoperable implementations. I don't believe that the APRS
> >> protocol specification, as it is currently envisioned, will be adequate to
> >> permit the development interoperable APRServe or IGate implementations.
> >>
> >> The APRServe/IGate protocol specification might include the following:
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> >> o A brief overview of the APRServe/IGate system
> >>
> >> o A description of the APRServe/IGate protocol (e.g., text strings
> >> transported over the telnet protocol)
> >>
> >> o The format of messages forwarded by the APRS/IGate system, which appear
> >> to be either in the TNC-2 MONitor command output format or the
> >> Timewave/AEA MONitor command output format, (or, some software seems to
> >> munge the two formats together in one packet). Somewhere I drafted ABN
> >F
> >> descriptions of the TNC-2 and Timewave/AEA MONitor command output
> >> formats.
> >>
> >> o The IGate status protocol (identified by the "<" APRS protocol
> >> identifier, but listed as "reserved" in the current APRS protocol
> >> specification)
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> >> <IGATE MSG_CNT=nnn LOC_CNT=nnn FILL_CNT=nnn
> >>
> >> o APRServe/IGate comments ("#" in the first column of a line)
> >>
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> >> - 23
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> >> - ...
> >>
> >> o A description of the redundant frames that are ignored
> >>
> >> o A description of any MIC-E translations
> >>
> >> o The APRServe/IGate authentication protocol, or at least a hint that one
> >> exists
> >>
> >> o A description of the characters that the APRServe/IGate system does and
> >> doesn't forward
> >>
> >> o A description of the call signs that the APRServe/IGate system use that
> >> don't conform to the AX.25 specification (i.e., calls longer than six
> >> characters)
> >>
> >> o Probably a bunch of other stuff I forgot or don't know...
>
> ---
> You are currently subscribed to aprsspec as: jeff@aerodata.net
> To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

```

```

---
You are currently subscribed to aprsspec as: wd5ivd@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

```

## 108. [aprsspec] Re: PROTEST: Internet APRS protocol specification

```

From: John Ackermann <jra@febo.com>
Date: Wed, 13 Oct 1999 22:09:09 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: John Ackermann <jra@febo.com>,
    APRS Spec Discussion List <aprsspec@lists.tapr.org>,
    Steve Dimse K4HG <k4hg@tapr.org>, jra@meow.febo.com
Message-ID: <LYR11594-44850-1999.10.13-21.21.20--wd5ivd#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In message <38053582.B5F85E13@aerodata.net>, Jeff King writes:
>
>
> John Ackermann wrote:
>
>> However, I think I need to say that the group didn't contemplate that
>> the comment process would include anything like a "protest" and I do not

```

>> believe that they feel obligated to accede to external requests for formal  
>> votes.  
>  
>Understood. But the question here is does the WG feel obligated to  
>comply with written agreements they all(?) agreed to? This is  
>a serious issue and what my "PROTEST" was meant to address.

Jeff, I can't speak for the group on what they think should or shouldn't be part of the specification. But as a very practical matter, the focus now is to document the on-air protocol and that is what the draft is addressing. Believe me, there's plenty to do in that space!

The group members are all subscribed to this list, so they've heard your arguments (in addition to my more formal transmittal that will come at the close of the comment period). I can't say what they'll decide (and, by the way, I don't have a vote except as a tie-breaker), but I can say that your request has been heard.

John

---

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---

## 109. [aprsspec] Re: PROTEST: Internet APRS protocol specification

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Wed, 13 Oct 1999 22:20:43 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-44852-1999.10.13-21.34.01--wd5ivd#tapr.org@lists.tapr.org>  
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Jeff..

I think you are missing the point..

I agree, a person SHOULD be able to write an application that receives data from the internet using JUST the APRS-Spec document.

I feel that they CAN write such an application with just what is being presented. There is NO extra information needed..

The FIRST person to hook up MacAPRS to the Internet was someone OTHER than me.. I don't even know if Steve was first or not..

However did it, did it WITHOUT any help from me, in fact, they did it without me knowing it COULD be done..

This is going to take a little bit of explaining so bear with me a minute..

The Macintosh has a Communications structure called the COMM TOOLBOX. There are MANY different CONNECTION TOOLS. The USER sets up the COMM TOOLBOX from the SETTINGS menu of any program that uses the COMM TOOLBOX.

Some of the common TOOLBOX connections are:

- SERIAL TOOL
- MODEM TOOL
- TCP/IP TOOL
- etc

Each of these tools has parameters that have to be set BY THE USER so they will work.

To use MacAPRS with a TNC, you use the SERIAL TOOL and configure it to be 9600 baud (or what-ever), 8 Bits, 1 stop, no parity etc.. And you select which port you are going to use.

To configure a communications program using the MODEM tool, you set up the baud rate, the phone number, the data bits, the stop bits, the parity, etc, and you select which port you are going to use.

To configure a program to use the TCP/IP tool, you set up the HOST NAME and the CONNECTION PORT, the DEFAULT for Telnet is 23.

Now, the person that FIRST used MacAPRS on the Internet found a

TCP/IP tool that -I- did not know about at the time, and configured it to talk to WA4DSY's TCP/IP based APRS reflector (for lack of a better name).

LOW AND BEHOLD, MacAPRS was ON THE INTERNET, and WORKING!!!!!!!

There was NO, I repeat, NO, ZERO, NONE, ZIP, extra work on my part to make it work, it JUST WORKED..

The REASON why it worked is the PROTOCOL is no different..

Now, since that time, we have added the THIRD PARTY TRAFFIC concept, which -IS- documented in the spec (it may not be complete, but it -IS- there)

As for someone wanting to write their own version of an APRS Server, the functions of the internal workings of the program(s) is NOT part of the spec.

The functionality of a SERVER is not really part of the Spec.

The data that the server has to understand, is really ZERO if you get down to it, take data in (-ANY- data) reflect it back out..

Now since Windows does not have a slick communications tool box system like the Macintosh, we had to write EXTRA code to make it receive the data via TCP/IP,, But we did not write ANY extra code to decode that data.

On the other end of the stuff with a server.. The only 'standards' are that most people are using is

Port 10151 for ALL of the data  
Port 144390 for the LOCAL data only..

There is NOTHING that says a person has to do this, nor is there any real reason to insist that the operator of a server even stick to this 'standard'.. Therefore, this fact is NOT part of the spec in any way shape or form.

If someone wanted to say this was the STANDARD, then someone in Europe that uses a different port would complain because they do not use 144390, same goes for Austrailia and other parts of the world.

The ONLY thing that is not being divulged is the hash codes, and Steve will give that to anyone that is ready for it and will agree not to release it to the public..

Keith

>Steve:

>

>As we apparently disagree on what and even if any internet specific  
>spec information needs to be included in the first draft of  
>APRSSPEC, I will ask that a PROTEST be entered and refer  
>this matter to the WG for vote. The issue in question is what  
>actually was agreed upon, in writing, by the WG to provide  
>as it relates to internet specifications in the first draft (see my comments  
>later for more detail).

>

>John, can you see that this happens? (as well as read along here)

>

>Now some specifics on what you last said.

>

>Steve Dimse K4HG wrote:

>

> > On 10/8/99 1:02 PM Jeff King (jeff@aerodata.net) wrote:

> >

> > >Steve:

> > >

> > >The purpose of the APRSSPEC, as I understand it, is so someone presently  
> > >outside of the present authors can develop APRS compatible display and  
> > >tracking issues. In other words, to make APRS "Open Source".



> > >  
> > >As APRSSERVE is a integral part of this, it is imperative that it also be  
> > >documented, as is spelled out in the agreement that the WG, which you  
> > >are a member of, came to agreement upon.  
> > >  
> > The is nothing hidden in APRServe, other than the password algorithm. It  
> > is all documented in my various DCC papers and web site files.  
>  
>Then we need LINKS to these documents.... The APRSSPEC  
>is supposed to be a freestanding reference document. It should  
>include this data  
>  
>or at least the links so someone not with your knowledge can develop a  
>APRS internet linked application.  
>  
>  
> > The APRS  
> > WG charter very specifically states that it deals with the protocol  
> > itself, not the user interface or other related issues.  
>  
>It has nothing to do with user interfaces. We are talking raw  
>protocol and specs here. I've already made this clear.  
>  
> > At some point we  
> > will likely expand the charter to include other topics like the internet  
> > system and XML spec, but we must be more focused at this time.  
>  
>The TAPR announcement 2 \*specifically\* states internet  
>protocols NOW. Not deferred, not later, not real soon now. Its says  
>with the FIRST DRAFT which is the process we are doing now.  
>We are not talking about XML, but what is presently being used.  
>  
>I quote from announcement2.pdf, on page 3, paragraph 1:  
>  
> >Protocol Committee  
> >The APRS Protocol Specification is the formal definition of the  
>data elements  
>and  
> >message formats used to communicate between APRS devices via  
>wireless or wired  
> >(e.g., Internet) connections. It does not include user interface or other  
>elements that  
> >do not affect the content or format of these interface components.  
>  
>Then from paragraph 3 it states:  
>  
> >The Protocol Committee intends to publish Version 1.0 of the APRS Protocol  
> >Specification by the end of October 1999. The first draft of the  
>Specification  
>will be  
> >made available to the amateur radio community by the end of June 1999, and  
> >comments will be accepted as defined below.  
>  
>This may be the key to the disagreement here. Is it your thinking that the  
>document is wrong and does not call for the internet specs to be released  
>with the first draft, as it seems to state?  
>  
>  
> > >While you are correct, it does use the "text output" of the TNC, there are  
> > >other issues that need to be documented. For example, the tcp/ip port  
> > >numbers that APRSSERVE uses.  
> > >  
> > These are on the web site, and there is no need for another application  
> > to use the same port numbers in any case.  
>  
>You've said that to me before, and I've never been able to find them. Even if  
>this is true, YOU STILL NEED TO DOCUMENT THEM IN THE  
>APRSSPEC. And if your trying to claim server PORT NUMBERS are  
>an operational issue, then you should note that APRS operational specs are  
>also in the spec. But port numbers are commonly ASSIGNED to specific  
>apps, hence it is my claim they are NOT operational issues but SPEC  
>issues.  
>  
>They need to be in APRSSPEC.  
>  
>  
> > >Without this information, it would require reverse engineering  
> > >of APRServe to develop a internet capable "APRS display" application.  
> > >

> > Wrong. With the APRS protocol spec, you have everything you need to write  
> > such an application.  
>  
>Port numbers? Authentication? the process to connect to the server?, the  
>status messages on port 14501? NONE OF IT IS THERE. Its needs to be  
>referenced in the APRSSPEC document.  
>  
>  
> > >Or look at it another way. You need to write a description, so a  
>programmer  
> > >with the basic understanding of APRS, can successfully write a APRServe  
> > >application without to many questions to you. Without the tcp  
>port numbers,  
> > >as well as the RF messaging authentication, I fail to see how this can be  
> > >done.  
> > >  
> > The only thing secret is the actual algorithm for converting a callsign  
> > to a validation number. This must remain a secret or else there is no  
> > reason to have it at all, and every IGate operator's license is at risk.  
>  
>While this may very well be true, the charter of the WG doesn't call  
>for partial disclosure as I read it, it calls for full disclosure. See the  
>next comment.  
>  
> >  
> > I have shared it, and will continue to share it, with everyone that  
> > develops a working application that requires it.  
>  
>Since there appears to be a legitimate reason not to disclose this, then  
>you need to include the above statement and process in the APRSSPEC.  
>In other words, go on record both with the process to obtain the  
>validation number as well as your commitment to do so along with  
>any conditions you may have. And put this in the spec. Also, it  
>might not hurt to put that specific "secret" algorithm in escrow  
>in case something were to happen, and you were unable to provide  
>it, it could still be obtained.  
>  
>If you still don't agree with me... fine, but lets let the WG make  
>that decision, not you.... I still say there is a OMISSION  
>with regards to this part of the document.  
>  
>And in closing, I quote Tim Salo's excellent message of Sunday  
>October 10th, to which the WG was silent to. I think the spirit  
>of what he is saying needs to be considered as well as noting  
>he offered to do the work himself. You might consider taking  
>him up on his offer as he clearly has a good handle on things.  
>  
>73  
>  
>Jeff  
>  
>  
>  
>Tim Salo wrote on October 10th, 1999:  
>  
> > > Subject: [aprsspec] Re: Omission: Internet APRS protocol specification  
> > > Date: Fri, 8 Oct 1999 11:36:33 -0500  
> > > From: Steve Dimse K4HG <k4hg@tapr.org>  
> > >  
> > > APRServe uses the text output of the TNC, so there is no separate  
> > > protocol to be documented.  
> > >  
> > > I am not entirely convinced that this is the case.  
> > >  
> > > I believe that the objective of a protocol specification is to enable the  
> > > development of interoperable implementations. I don't believe  
> > > that the APRS  
> > > protocol specification, as it is currently envisioned, will be adequate to  
> > > permit the development interoperable APRServe or IGate implementations.  
> > >  
> > > The APRServe/IGate protocol specification might include the following:  
> > >  
> > > o A brief overview of the APRServe/IGate system  
> > >  
> > > o A description of the APRServe/IGate protocol (e.g., text strings  
> > > transported over the telnet protocol)  
> > >  
> > > o The format of messages forwarded by the APRS/IGate system,  
> > > which appear

```

> > to be either in the TNC-2 MONitor command output format or the
> > Timewave/AEA MONitor command output format, (or, some
>software seems to
> > munge the two formats together in one packet). Somewhere I
>drafted ABNF
> > descriptions of the TNC-2 and Timewave/AEA MONitor command output
> > formats.
> >
> > o The IGate status protocol (identified by the "<" APRS protocol
> > identifier, but listed as "reserved" in the current APRS protocol
> > specification)
> >
> > <IGATE MSG_CNT=nnn LOC_CNT=nnn FILL_CNT=nnn
> >
> > o APRServe/IGate comments ("#" in the first column of a line)
> >
> > o APRServe/IGate port numbers
> >
> > - 23
> > - 10151
> > - 14579
> > - 1313
> > - ...
> >
> > o A description of the redundant frames that are ignored
> >
> > o A description of any MIC-E translations
> >
> > o The APRServe/IGate authentication protocol, or at least a
>hint that one
> > exists
> >
> > o A description of the characters that the APRServe/IGate
>system does and
> > doesn't forward
> >
> > o A description of the call signs that the APRServe/IGate
>system use that
> > don't conform to the AX.25 specification (i.e., calls longer than six
> > characters)
> >
> > o Probably a bunch of other stuff I forgot or don't know...
>
>
>---
>You are currently subscribed to aprsspec as: ksproul@vger.rutgers.edu
>To unsubscribe send a blank email to leave-aprsspec-11594T@lists.tapr.org

Keith Sproul 732 445-3695 Office
Student Housing Network Coordinator 732 445-2968 Fax
mailto:ksproul@rci.rutgers.edu 732 821-4828 Home
http://dorm.rutgers.edu/~ksproul/ WU2Z

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```

## 110. [aprsspec] Re: PROTEST: Internet APRS protocol specification

```

From: "Scott Morris" <smorris@mindspring.com>
Date: Wed, 13 Oct 1999 22:44:42 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: <aprsspec@lists.tapr.org>
Message-ID: <LYR11594-44855-1999.10.13-21.56.31--wd5ivd#tapr.org@lists.tapr.org>
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```

I have read much of the information passed by on this subject, and understand some of it. I have a suggestion for implementation on the Internet addition. I am by no means an expert. My expertise is in Data Communications, LANs and WANs and switching.

The APRS spec is version 1.0, let's go one step at a time. If we advance this in a step process covering one aspect at a time there will be less margin for error. Let 1.0 provide a spec for APRS itself, then maybe 1.1 provide for implementation for the Internet.

The Internet is made up of many specs. There is one for ip addressing, and then there is another one for TCP and UDP. Each is separate, and the one depends on the other. Maybe the APRS Internet implementation needs to be looked at in a layered approach. If we try and build it all at once it will

take forever, because the more people that provide input the more requests there will be.

One alternative is to just encapsulate the APRS packet within a defined Server packet. The Server packet could have its own header, and the APRS packet is contained within. This technique is done on networks all over, in Frame Relay, PPP, ATM, and many others. I support both LANs and WANs and have had to deal with this methodology.

I don't feel anyone is trying to hide anything, and up until now APRS seems to work quite well, many have developed software to read and interpret the packets. You can now connect a Palm Pilot to see the data come straight off of the equipment.

The APRSSPEC listserv is there for everyone to provide comment, and peoples comment has provided. Hopefully all the members of the WG are also on the list, and they will take everyone's input into account.

This is just my opinion and a few suggestions.

73's (and I mean that deeply to all)

Scott Morris, KF4SNV

---

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---

### 111. [aprsspec] Fw: Serial questions. (after @home crash)

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Thu, 14 Oct 1999 00:48:01 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44883-1999.10.14-01.01.06--wd5ivd@tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> (This may be a dupe, but my previous post didn't make it apparently)  
> I have a few questions, and maybe this is something that needs to be in  
> the spec too..  
>  
> WRT the serial interface, do the various versions of APRS do hardware  
> handshake, Xon/Xoff, or nothing?  
>  
> Is the serial word format defined? 8N1 702... ? I'm assuming 8N1 at this  
> point.  
>  
> I am writing code for a DF unit that will speak to APRS at minimum 19200,  
> preferably faster, and pass it data from GPS, TNC, DF, and another  
device,  
> possibly an NMEA compass, and I am wondering about the ability of APRS to  
> take that data stream. I can do either mode of handshaking. (RTS/CTS  
vastly  
> preferred)  
>  
> Do they all (or any) have the ability to receive NMEA data and DF data on  
> the same port that the TNC is talking to? What NMEA sentences are  
> supported/required? I have the ability and resources to translate  
whatever  
> I get to a standard format, so I don't necessarily have to use NMEA GPS  
> units, anything with a documented (or hackable) protocol will be fine, but  
I  
> need to know what NMEA sentences APRS needs to function properly.  
>  
> I know in the past this has been done with a switch arrangement, but  
given  
> that APRS expects data on the serial port to be error-free, this seems  
> unwise to me, as there was no mechanism to prevent chopping the other  
> device's datastream in mid-flow. This results in half-packets, munged data  
> and callsigns. My approach is to buffer the data and present it to APRS  
in  
> ordered groups, so that none of the data is lost or destroyed.  
>  
> I did notice that the N8LUE DF format is discussed, but not the Agrelo, or  
> any others if they exist. The first char of the agrelo/micro-finder format  
> is defined, but not the rest.  
>  
> FWIW, Agrelo is defunct, and I am working with Steve at SWS to move that  
> product line forward. There will likely be no more DF Jrs, or sadly,  
> Micro-PLLs, unless Steve produces them. On a positive note, our new DF

> system is approaching alpha prototype stage, with PCBs just over a week  
> away. It's been protoed once already, as a single processor system to  
test  
> the concepts, but that hardware wouldn't have survived the mobile  
> development environment.  
>  
> I will probably support the agrelo format for my own data, and I have  
> discussed with the Sprouls, sending NMEA TTM messages, but it's looking  
more  
> like I shouldn't be the one creating TTM messages, as I may not have  
enough  
> data.  
>  
>

---

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## 112. [aprsspec] Suggestion for Clarity was: [PROTEST: . . .]

From: PropNET <propnet@greeceny.com>  
Date: Thu, 14 Oct 1999 07:01:52 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44889-1999.10.14-06.15.04--wd5ivd#tapr.org@lists.tapr.org>  
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OK...the PropNET goofball weighs in on the discussion (grin) . . .

It may be a good excersize to document the "OSI Model" on which APRS is based. Once that is done (and should be done fairly easily by those in-the-know), the WG can point to which areas of the model they are charged with documenting.

To clarify...it is my understanding that the WG is not charged with documenting the Application Layer (the program of WinAPRS, APRSdos, XAPRS, etc.). That seems to be the domain of the person who writes the software. Nor is it charged with documenting the protocols of the Physical Layer (how a radio interacts with the ether to get the information from one point to the other). That is already done by reading the schematic that comes with the radio.

Their activity seems to be somewhere in-between.

An "OSI Model for APRS" would help us "observers" to focus more.

-- Ev, W2EV --

---

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---

## 113. [aprsspec] Serial handling, at the hardware level, and some DF questions.

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 13 Oct 1999 14:49:31 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44903-1999.10.14-08.45.17--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I have a a few questions, and maybe this is something that needs to be in the spec too..

WRT the serial interface, do the various versions of APRS do hardware handshake, Xon/Xoff, or nothing?

Is the serial word format defined? 8N1 702... ? I'm assuming 8N1 at this point.

I am writing code for a DF unit that will speak to APRS at minimum 19200, preferably faster, and pass it data from GPS, TNC, DF, and another device, possibly an NMEA compass, and I am wondering about the ability of APRS to take that data stream. I can do either mode of handshaking. (RTS/CTS vastly preferred)

Do they all (or any) have the ability to receive NMEA data and DF data on the same port that the TNC is talking to? What NMEA sentences are supported/required? I have the ability and resources to translate whatever I get to a standard format, so I don't necessarily have to use NMEA GPS units, anything with a documented (or hackable) protocol will be fine, but I

need to know what NMEA sentences APRS needs to function properly.

I know in the past this has been done with a switch arrangement, but given that APRS expects data on the serial port to be error-free, this seems unwise to me, as there was no mechanism to prevent chopping the other device's datastream in mid-flow. This results in half-packets, munged data and callsigns. My approach is to buffer the data and present it to APRS in ordered groups, so that none of the data is lost or destroyed.

I did notice that the N8LUE DF format is discussed, but not the Agrelo, or any others if they exist. The first char of the agrelo/micro-finder format is defined, but not the rest.

FWIW, Agrelo is defunct, and I am working with Steve at SWS to move that product line forward. There will likely be no more DF Jrs, or sadly, Micro-PLLs, unless Steve produces them. On a positive note, our new DF system is approaching alpha prototype stage, with PCBs just over a week away. It's been protoed once already, as a single processor system to test the concepts, but that hardware wouldn't have survived the mobile development environment.

I will probably support the agrelo format for my own data, and I have discussed with the Sprouls, sending NMEA TTM messages, but it's looking more like I shouldn't be the one creating TTM messages, as I may not have enough data.

---

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## 114. [aprsspec] Re: Suggestion for Clarity

From: Tim Salo <salo@networkcs.com>  
Date: Thu, 14 Oct 1999 08:40:00 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44904-1999.10.14-08.52.04--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Thu, 14 Oct 1999 07:01:52 -0400  
> From: PropNET <propnet@greeceny.com>  
> Subject: [aprsspec] Suggestion for Clarity was: [PROTEST: . . .]  
> [...]  
> It may be a good excersize to document the "OSI Model" on which APRS is  
> based. Once that is done (and should be done fairly easily by those  
> in-the-know), the WG can point to which areas of the model they are charged  
> with documenting.

I believe that a description of the protocol layers used by the APRS system would be useful. However, I don't believe that the APRS protocols were developed with a firm notion of protocol layering in mind. For example, some protocol fields are used by different protocol layers at different times. I created a description of the APRS protocol layers, but it is not something that the APRS developers would recognize, (in part because they don't appear to be thinking in terms of protocol layers).

> To clarify...it is my understanding that the WG is not charged with  
> documenting the Application Layer (the program of WinAPRS, APRSdos, XAPRS,  
> etc.). ...  
> [...]

As long as you provided me this opportunity to be excessively pedantic, I will note that the APRS protocols are application layer protocols. What is outside the scope of the APRS specifications is the translation between the APRS protocols and what is displayed on the screen.

> An "OSI Model for APRS" would help us "observers" to focus more.

I believe that the concept of "protocol layering" is one of the most fundamental concepts upon which well-designed protocols are build. I also believe that a protocol layering model for APRS would be a valuable creation.

(As we "advance the radio art" I would like to think that we use good science, whether it be electrical engineering, computer science, or what we know about protocol development. [Sometime when I am having a bad day, I may submit a petition for rulemaking that changes Part 97 to read "advancing the radio science" so we don't get confused about this topic...])

-tjs

---

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---

## 115. [aprsspec] Re: Serial handling, at the hardware level, and some DF questions.

From: John Ackermann <jra@febo.com>  
Date: Thu, 14 Oct 1999 09:51:34 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44905-1999.10.14-09.03.42--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I usually stay out of the specifics of the protocol discussion, because I don't know what I'm talking about, but I think I can answer this one on behalf of the Group.

The protocol spec is limited to the data elements and formats used over the air. It doesn't encompass anything like the serial port specs or other elements at the hardware level.

It's not that such information isn't useful, but it's beyond what the document is trying to accomplish at this point.

John N8UR  
jra@febo.com

> I have a a few questions, and maybe this is something that needs to be in  
> the spec too..  
>  
> WRT the serial interface, do the various versions of APRS do hardware  
> handshake, Xon/Xoff, or nothing?  
>  
> Is the serial word format defined? 8N1 702... ? I'm assuming 8N1 at this  
> point.  
>  
> I am writing code for a DF unit that will speak to APRS at minimum 19200,  
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> possibly an NMEA compass, and I am wondering about the ability of APRS to  
> take that data stream. I can do either mode of handshaking. (RTS/CTS vastly  
> preferred)  
>  
> Do they all (or any) have the ability to receive NMEA data and DF data on  
> the same port that the TNC is talking to? What NMEA sentences are  
> supported/required? I have the ability and resources to translate whatever  
> I get to a standard format, so I don't necessarily have to use NMEA GPS  
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>  
> I know in the past this has been done with a switch arraignment, but given  
> that APRS expects data on the serial port to be error-free, this seems  
> unwise to me, as there was no mechanism to prevent chopping the other  
> device's datastream in mid-flow. This results in half-packets, munged data  
> and callsigns. My approach is to buffer the data and present it to APRS in  
> ordered groups, so that none of the data is lost or destroyed.  
>  
> I did notice that the N8LUE DF format is discussed, but not the Agrelo, or  
> any others if they exist. The first char of the agrelo/micro-finder format  
> is defined, but not the rest.  
>  
> FWIW, Agrelo is defunct, and I am working with Steve at SWS to move that  
> product line forward. There will likely be no more DF Jrs, or sadly,  
> Micro-PLLs, unless Steve produces them. On a positive note, our new DF  
> system is approaching alpha prototype stage, with PCBs just over a week  
> away. It's been protoed once already, as a single processor system to test  
> the concepts, but that hardware wouldn't have survived the mobile  
> development environment.  
>  
> I will probably support the agrelo format for my own data, and I have  
> discussed with the Sprouls, sending NMEA TTM messages, but it's looking more  
> like I shouldn't be the one creating TTM messages, as I may not have enough  
> data.  
>  
>  
> ---  
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---

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---

## 116. [aprsspec] Re: Help with MIC-E Protocol Spec please

From: Steve Dimse K4HG <k4hg@tapr.org>  
Date: Thu, 14 Oct 1999 12:28:38 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44926-1999.10.14-12.41.16--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 10/10/99 10:41 AM Keith Sproul (ksproul@vger.rutgers.edu) wrote:

>Yes, you are correct.. Anyone wanting to parse stuff from the  
>Servers, MUST be able to handle both..  
>  
>Anyone wanting to write a program that works with TNCs in general,  
>must be able to handle both..  
>  
>If someone was using either KISS mode, or writing a program that was  
>ONLY for use with a certain brand of TNC, they would not have to..  
>  
Not exactly true. The "third party" protocol packets start with '}', and then the TNC text packet. These may be in either AEA or TNC-2 format. If you want to parse APRS packets, you need to be able to handle both formats.

Steve K4HG

---

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---

## 117. [aprsspec] Test

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 13 Oct 1999 20:02:59 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44977-1999.10.14-18.18.29--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I posted twice a list of questions to this list, and have seen neither copy come down the list here.

---

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---

## 118. [aprsspec] Re: Test

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Thu, 14 Oct 1999 18:10:03 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44978-1999.10.14-18.22.57--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> I posted twice a list of questions to this list, and have seen neither  
copy  
> come down the list here.

My emails from yesterday are trickling out from @home, Ignore this.

---

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---

## 119. [aprsspec] Serial questions.

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Wed, 13 Oct 1999 19:26:57 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-44980-1999.10.14-18.30.37--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain



(This may be a dupe, but my previous post didn't make it apparently)  
I have a few questions, and maybe this is something that needs to be in the spec too..

WRT the serial interface, do the various versions of APRS do hardware handshake, Xon/Xoff, or nothing?

Is the serial word format defined? 8N1 702... ? I'm assuming 8N1 at this point.

I am writing code for a DF unit that will speak to APRS at minimum 19200, preferably faster, and pass it data from GPS, TNC, DF, and another device, possibly an NMEA compass, and I am wondering about the ability of APRS to take that data stream. I can do either mode of handshaking. (RTS/CTS vastly preferred)

Do they all (or any) have the ability to receive NMEA data and DF data on the same port that the TNC is talking to? What NMEA sentences are supported/required? I have the ability and resources to translate whatever I get to a standard format, so I don't necessarily have to use NMEA GPS units, anything with a documented (or hackable) protocol will be fine, but I need to know what NMEA sentences APRS needs to function properly.

I know in the past this has been done with a switch arrangement, but given that APRS expects data on the serial port to be error-free, this seems unwise to me, as there was no mechanism to prevent chopping the other device's datastream in mid-flow. This results in half-packets, munged data and call signs. My approach is to buffer the data and present it to APRS in ordered groups, so that none of the data is lost or destroyed.

I did notice that the N8LUE DF format is discussed, but not the Agrelo, or any others if they exist. The first char of the agrelo/micro-finder format is defined, but not the rest.

FWIW, Agrelo is defunct, and I am working with Steve at SWS to move that product line forward. There will likely be no more DF Jrs, or sadly, Micro-PLLs, unless Steve produces them. On a positive note, our new DF system is approaching alpha prototype stage, with PCBs just over a week away. It's been protoed once already, as a single processor system to test the concepts, but that hardware wouldn't have survived the mobile development environment.

I will probably support the agrelo format for my own data, and I have discussed with the Sprouls, sending NMEA TTM messages, but it's looking more like I shouldn't be the one creating TTM messages, as I may not have enough data.

---

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## 120. [aprsspec] Comments

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 14 Oct 1999 21:38:48 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-45004-1999.10.14-23.51.05--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings -

I've just joined the mail group after finding the draft APRS standards on the TAPR web site. Because I am in the middle of writing some APRS code, this is exactly what I have been looking for. This also means that I have been looking at the documents very critically, to see whether they answer a program writer's crucial questions.

Since I have just joined, I am not yet aware of points that may have previously been discussed. If I am covering old ground, please accept my apology.

=====  
ITEM 1:

I see major weakness in the documents in the tendency to refer to operation of existing software. For example, the Symbols document says this near the bottom of the first page discussing "symbol characters":

"Press F1-S in APRSdos to see these symbols. Some symbols may have a numeric overlay character 0-9 or A-Z. These are shown on the F1-S display with the numeral "3" overlaid."

First, it is factually incorrect because "A-Z" are not numeric characters. But, more importantly, this style of presentation is verboten in any standard I have ever seen because it refers to a specific software implementation which is not necessarily duplicated in other implementations. That is, the description includes things that are not relevant to the protocol. Saying that a particular key is pressed or a specific menu is accessed should not be part of the protocol description. One might, perhaps, say:

"The symbol characters are intended to have an overlay character 0-9 or A-Z. Some software implementations allow you to see the character with a fixed overlay such as '3' ".

One can certainly refer to support documents for various software implementations so long as the documents are (1) widely available and (2) platform neutral.

This same problem appears in the Symbols document in "Areas".

This leads further to the observation that a color-filled area need not behave as described (and it is not even necessary that a program use a "PList"!)

A similar problem is in the "VALUE SIGNPOSTS" section. There are really two problems with this section (on the last page of Symbols document). One problem is that its vague but is a useful clarification for programmers.

The other problem is the reference to specific software implementation. One might, instead, write:

"Signposts are intended to display as a yellow box with a 1 to 3 letter overlay without name or callsign. You specify the 1-3 character overlay by enclosing them in braces in the comment field. Thus a VALUE Signpost with {55} would appear as a sign with 55 on it. This was designed for posting the speed of traffic past speed measuring devices. They can be used for any purpose. To avoid cluttering the map, they should ONLY be displayed on fine-scale maps (say, 8 miles or less)."

=====  
ITEM 2 - symbol list

A second philosophical point concerns how the symbol list is viewed. Understandably, the original (fairly small) symbol table could easily be viewed as a primary table and secondary table. Now, such a distinction seems quite uninforming. There is simply an ordered pair of characters that specify a symbol in one big table. One character pair is used by the GPSxyz format and a different character pair is used with certain position reporting formats. There is no "primary" or "secondary" about it! This is particularly

true with the changes in handling the coding of overlay characters. Once this was done, it is just "a symbol table indexed via two sets of character-pairs".

=====

I have some specific questions about the symbol list which will be sent as a separate message to avoid making this too long.

Thanks for all the great effort that everyone has put into APRS. I hope that I have not stepped on anyone's toes because that isn't my intent. I do have some frustrations, however, as a programmer, due to poor protocol descriptions and I hope that the protocol standard document will help solve that problem.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
                                  Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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## 121. [aprsspec] Re: Comments

From: Robert Winingham <kc5ejk@onramp.net>  
Date: Sat, 16 Oct 1999 01:58:20 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11594-45256-1999.10.16-02.10.20--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>Since I have just joined, I am not yet aware of points that may have  
>previously been discussed. If I am covering old ground, please accept my  
>apology.

If this sig is not archived at www.tapr.org I have  
the mail from 1999/10/2. Eudora might be able to send it in bulk  
I have the mail count at 121 including yours (376 K).

Fills to others available via private mail.

73

----- kc5ejk@onramp.net or kc5ejk@amsat.org -----

---

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## 122. [aprsspec] Re: aprsspec digest: October 16, 1999

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Sun, 17 Oct 1999 23:34:31 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-45450-1999.10.18-01.46.49--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Here are some specific questions about the Symbols document. My point in  
asking these questions is two-fold. First, I would like to know their  
answers. Second, if I have questions, others must also.

=====  
A. GPSxyz symbol coding -

What happens to the 3rd code character in 2-character codes? Does the  
GPSxyz become GPSxy or does it become GPSxy(space)? That is, for a  
small aircraft, would one use "GPSBH " or "GPSBH"?

=====  
B. Symbol Table -

What is "HELO"? Is it short for "helicopter" or is it short for "hello"? Or,  
something else?

=====  
C. Symbol Table -

Does "shuttle" refer to a shuttle-bus or to the space shuttle?

=====  
D. Symbol Table -

Why the reference to "Satellite/Pacsat"? Does it refer to any satellite?  
Or is it to refer only to Pacsat? Then again, is not a Pacsat a satellite?

=====  
E. Areas -

What are the "offset" values references in the Area format? Offsets measured  
from what?

=====  
F. Typo in "HURRICANES, TROPICAL STORMS and DEPRESSIONS"...

"yellos".

=====  
G. In "SYMBOLS ON MAPS!",

how does one "permanently embed" a symbol on a map.  
Are we talking about how some program works, or are we talking about over-the-air protocol? If its over the air, how does the symbol become "permanent"  
Is it transmitted forever, or does it get saved by other machines and is displayed forever? If it is not part of the over-the-air protocol, then why is it here?

=====  
H. A general plea: please more concrete examples. I am especially concerned about value signposts, areas, and a variety of packet types that include symbol characters.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of  
                                                 Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 123. [aprsspec] Re: aprsspec digest: October 16, 1999

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 18 Oct 1999 10:03:22 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-45477-1999.10.18-09.17.53--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 17 Oct 1999, Jim Wagner wrote:

> What happens to the 3rd code character in 2-character codes? Does the  
> GPSxyz become GPSxy or does it become GPSxy(space)? That is, for a  
> small aircraft, would one use "GPSBH " or "GPSBH"?

It is a callsign and is always sent by the TNC as 6 bytes IAW with the AX.25 spec.

> What are the "offset" values references in the Area format? Offsets measured  
> from what?

>From the LAT/LONG included in the posit.

Otehr comments noted.

Bob

---  
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---

## 124. [aprsspec] Re: Observation

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Mon, 18 Oct 1999 11:12:52 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-45498-1999.10.18-11.27.10--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Often, APRS is used with port-sharing devices that have the effect of trashing packets when they un-intelligently switch from one source to another.

There is no mechanism in place to prevent such trashed packets from being

interpreted as valid data.

I realize that this is, again, not an on-air issue, but I think it's significant.

---

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---

## 125. [aprsspec] Comments about APRS Specs

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Wed, 20 Oct 1999 20:07:02 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11594-46030-1999.10.20-22.19.29--wd5ivd#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings -

After reading the Protocol description in detail, I have a lot of comments and questions. If this has been covered previously, my apologies.

Here are 3 comments about the existing format. Format IS important, because a consistent format reduces ambiguity.

=====  
First, a format suggestion. Please put it into a some sort of hierarchical format! Its hard to tell where you are from just the heading sizes, and when its reproduced in text-only format (as I have already had to do since the .PDF files are not down-loadable, at least with M\$Explorer/Win95), its almost impossible to tell where you are in the description, and what belongs to what. What I mean is like the following (it does not have to use exactly this style):

I. Heading

I.A. Section  
I.B. Section  
I.B.1 subsection  
I.B.2 subsection

etc.

=====  
Generally ....

Inconsistent symbols seem to be used when "a general number" is intended vs "a general letter, A-Z" is intended. Please, please, make an attempt to be consistent, because it makes interpretation very difficult. For example, "BLNa" appears to use the "a" to signify an alpha. But, other places, such as "GPSxyz", other characters are used. Similarly, "n" seems to be used to represent a number in some places and "#" in others, but maybe not, I can't tell for sure.

In other words, put it right up front..

"In the following text, unless specifically stated otherwise, '#' shall represent a single numeric digit, 0-9, '@' shall represent a single alpha character, A-Z or a-z, and '|' shall represent any printable ASCII character."

Or, something like that. And, then, use it!

=====  
Generally...

I would really like to see something like BNF notation used to describe field contents. With that kind of notation, for a 1-3 digit numeric field, one might write #[#[#]], that is, one digit is required, a second digit is optional, and, if there is a second digit, then a 3rd digit is optional. This greatly reduces the ambiguities and fuzziness which are all through the specification. I cannot tell, for example, which fields are fixed length and which are variable, because it is never explicitly stated. This makes for a very poor protocol standard. It is not even obvious which fields are required and which are optional in various message types.

There is nothing magic about BNF. It is simply one of several recognized format description languages. Please choose something standard, and use it.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM      near Corvallis OR, home of  
                                 Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 126. [aprsspec] How Soon Draft 2?

From: Ralph Milnes <milnes@openix.com>  
Date: Sun, 24 Oct 1999 19:55:47 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-46509-1999.10.24-19.09.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I finally got around to reviewing the Protocol Draft 1.

I've been subscribed to this SIG for a little while and know that there have been many, many suggestions regarding clarity, omissions, and typos. (But it's great to see how much has been put down in basic form!)

I don't know what to do at this point:

- \* Compare all previous suggestions to those that I would make and drop redundancies
- \* Just list all my suggestions, even though they may be duplicates
- \* Forget about commenting -- most everything has been caught - just wait for Draft 2

Any advice? What is the next step in the process? Who makes the call on that?

Ralph, KC2RLM

---  
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---

## 127. [aprsspec] Re: How Soon Draft 2?

From: John Ackermann <jra@febo.com>  
Date: Mon, 25 Oct 1999 08:19:54 -0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>, jra@meow.febo.com  
Message-ID: <LYR11589-46580-1999.10.25-07.32.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi Ralph --

Thanks for your message; it gives me an excuse to generally update folks about what's been going on.

Ian Wade, G3NRW, has volunteered to take over the process of editing the document. He has a complete archive of the messages that have been sent to this list, and he's also been communicating with the authors to get clarifications and corrections. He has just provided the Working Group with his second draft; I haven't had a chance to review it yet myself, so can't comment on it, but based on the messages I've seen, I think he's done a great job so far. The document is now something like 60 pages, and virtually all of the blanks that were in the initial draft have now been filled in.

The WG is still hoping to have the draft finalized by the end of the month, and I think there's a reasonable likelihood that will happen. It hasn't been decided yet whether the final draft will be put out for one more round of public comments; I suspect that decision won't be made until after the WG have had a chance to review it.

So, to answer your question -- new substantive comments about errors, omissions, unclear points, etc., are still welcome, though with the

number of comments that have been made, it's fairly likely that most of the biggies have been caught by now (I was going to suggest searching the mailing list archive, but noticed it's not in the TAPR search engine -- I'll suggest to Greg Jones that he add it). As to typos and formatting issues, the new drafts have changed so much that any comments there are probably obsolete.

Any comments made to this list will get to the WG members and Ian. It would be helpful if you would tag the subject line with something like "COMMENT:", "CORRECTION:", etc., so that such messages can be picked out easily.

73,  
John N8UR  
jra@febo.com

In message <LYR11592-46509-1999.10.24-19.09.58--n8ur#tapr.org@lists.tapr.org>,  
Ralph Milnes writes:

>I finally got around to reviewing the Protocol Draft 1.  
>  
>I've been subscribed to this SIG for a little while and know that there  
>have been many, many suggestions regarding clarity, omissions, and typos.  
>(But it's great to see how much has been put down in basic form!)  
>  
>I don't know what to do at this point:  
>  
>\* Compare all previous suggestions to those that I would make and drop  
>redundancies  
>\* Just list all my suggestions, even though they may be duplicates  
>\* Forget about commenting -- most everything has been caught - just wait  
>for Draft 2  
>  
>Any advice? What is the next step in the process? Who makes the call on that?  
>  
>Ralph, KC2RLM  
>  
>  
>  
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## 128. [aprsspec] CORRECTION:Altitude

From: Robert Winingham <kc5ejk@onramp.net>  
Date: Mon, 25 Oct 1999 14:17:12 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-46591-1999.10.26-09.25.20--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I still would like to know if /A=xxxxxx is going to be part of the supported Protocol.

Several balloon groups that used MIN/PIC chips to to decode the NMEA into posit reports striped the Altitude in meters from the GGA sentence and reported in feet. /A= was easy to tack on the end of a APRS packet.

The other important item is how the NEW Kenwood units will handle the sending of altitude.

73

----- kc5ejk@onramp.net or kc5ejk@amsat.org -----

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---

## 129. [aprsspec] Archives

From: Greg Jones <wd5ivd@tapr.org>  
Date: Mon, 25 Oct 1999 09:58:35 -0500

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-46637-1999.10.26-09.47.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
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The archive for the list has been available the whole time in the TAPR ftp area.

I have just included it into the indexed section on the web page.

Searchable:  
<http://www.tapr.org/cgi-bin/wilma/aprsspec>

the Index for October:  
<http://www.tapr.org/tapr/list-archive/aprsspec/9910/>

Cheers - Greg

-----

Greg Jones, WD5IVD                      Austin, Texas  
wd5ivd@tapr.org              <http://www.tapr.org/~wd5ivd>

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# November 1999

Original source file: aprsspec.9911

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## 1. [aprsspec] Re: APRS Version Designators

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 2 Nov 1999 18:50:55 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-47843-1999.11.02-18.03.56--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Someone wrote:

> A few balloon launches back we noticed that the balloon GPS data  
> said the payload was at 20,000 feet an hour after launch. It was  
> SUPPOSED to be at 60K+ feet.  
>  
> You guessed it. The GPS was putting out altitude in meters,  
> and the ground software wasn't doing the conversion.

No one said what version of APRS they were using, but I finally got around to checking and APRSdos does check the NMEA for meters or feet...

bob

---

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## 2. [aprsspec] Protocol Spec Update

From: John Ackermann <jra@febo.com>  
Date: Tue, 02 Nov 1999 19:07:29 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-47846-1999.11.02-18.20.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The new draft of the APRS Protocol Reference specification is going through the final phases of update, and we expect to publish it towards the end of November.

This is a little later than originally anticipated -- the delay is due to the document's having grown from the original 17 pages to more than 70 over the last three weeks!

The new draft incorporates detailed packet format diagrams, the APRS symbol tables, descriptions of compressed data format and Mic-E format (with a complete appendix explaining in detail how to decode Mic-E packets), and many more examples of APRS packets in general.

There is an enormous amount of detail in the document which the APRS Working Group is now double-checking. We're sure you'll like the finished result, and will find it's been worth waiting for. Because the document has been virtually rewritten since the original draft, we will have another public comment period prior to final adoption of Version 1.0.

I'd like to thank the APRS authors as well as our technical editor, Ian Wade, G3NRW, who have exchanged hundreds of emails over the last few weeks trying to nail down obscure points in the protocol. Their hard work has made a real difference in the document we'll be delivering. I'd also like to thank everyone who commented on the original draft; all those comments have been taken into consideration for this iteration.

73,  
John N8UR  
jra@febo.com

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### 3. [aprrspec] Re: Protocol Spec Update

From: Bill Vodall <Vodall@bigsky.com>  
Date: Tue, 02 Nov 1999 16:32:13 -0800  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-47849-1999.11.02-18.45.37--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>This is a little later than originally anticipated -- the delay is due  
>to the document's having grown from the original 17 pages to more than  
>70 over the last three weeks!

Wow. That's a lot of hard work!

>  
>The new draft incorporates detailed packet format diagrams, the APRS  
>symbol tables, descriptions of compressed data format and Mic-E format  
>(with a complete appendix explaining in detail how to decode Mic-E  
>packets), and many more examples of APRS packets in general.

Will these examples be extractable to form a first pass at a  
test suite?

Bill, WA7NWP

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### 4. [aprrspec] Re: Protocol Spec Update

From: John Ackermann <jra@febo.com>  
Date: Tue, 02 Nov 1999 20:11:18 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-47851-1999.11.02-19.24.28--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> >The new draft incorporates detailed packet format diagrams, the APRS  
> >symbol tables, descriptions of compressed data format and Mic-E format  
> >(with a complete appendix explaining in detail how to decode Mic-E  
> >packets), and many more examples of APRS packets in general.  
>  
> Will these examples be extractable to form a first pass at a  
> test suite?  
>  
> Bill, WA7NWP

That's a good question. The examples weren't developed with that in  
mind (and I didn't develop them), so I'm not sure whether the authors  
would consider them to be "official" test packets or not. I'll make  
sure we discuss that question.

John

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### 5. [aprrspec] Re: Protocol Spec Update

From: Mike Musick <mcmusick@anet-stl.com>  
Date: Wed, 3 Nov 1999 10:02:49 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-47904-1999.11.03-10.18.58--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bill asks -

>Will these examples be extractable to form a first pass at a  
>test suite?

Clearly, no.

Some (if not most) of the examples are hand-built for the purpose of  
illustration of the piece of protocol being discussed at that moment. While  
I suspect that most will "pass", I'll bet there are a number of examples  
that are good for the immediate topic but will crash and burn somewhere  
else.

A test suite will have to be addressed as a separate issue.

...mike/N0QBF

---

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## 6. [aprsspec] Re: Protocol Spec Update

From: Ian Wade <[ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)>  
Date: Wed, 3 Nov 1999 20:02:47 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-47920-1999.11.03-15.03.13--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-47920-1999.11.03-15.03.13--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR11659-47904-1999.11.03-10.18.58--ian#dowrmain.demon.co.uk@lists.tapr.org](mailto:LYR11659-47904-1999.11.03-10.18.58--ian#dowrmain.demon.co.uk@lists.tapr.org)>, Mike Musick <[mcmusick@anet-stl.com](mailto:mcmusick@anet-stl.com)> writes

>Some (if not most) of the examples are hand-built for the purpose of  
>illustration of the piece of protocol being discussed at that moment. While  
>I suspect that most will "pass", I'll bet there are a number of examples  
>that are good for the immediate topic but will crash and burn somewhere  
>else.

I hope they won't :-)

>

>A test suite will have to be addressed as a separate issue.

To echo Mike's comment, although the new version of the spec has many more examples than the first version, there are still nowhere enough to fully exercise APRS software. Building a proper test suite will not be a 5-minute job.

73

Ian, G3NRW

--

```
+-----+
| APRS on 144.800 [I0915X] ~55km/35 miles NNW of London |
|                                     email: g3nrw@arrl.net |
|                                     |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

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---

## 7. [aprsspec] Re: Slightly OT

From: "Dave VanHorn" <[dvanhorn@cedar.net](mailto:dvanhorn@cedar.net)>  
Date: Thu, 4 Nov 1999 21:18:49 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-48122-1999.11.04-20.32.49--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-48122-1999.11.04-20.32.49--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

But I figure the guys who know are probably here :)

In communicating with a TNC, what's the largest "sentence" one can send to/from the TNC, before encountering a <CR> or <LF>?

I've got a note here that GPS NMEA sentences can be up to 82 chars long. (yuk!)

I'm trying to figure out how large a comm buffer to allocate, assuming that I have to buffer an entire sentence to each device and from each device.

---

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## 8. [aprsspec] Re: Slightly OT

From: Tim Salo <salo@networkcs.com>  
Date: Thu, 4 Nov 1999 21:04:03 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-48144-1999.11.04-21.17.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: "Dave VanHorn" <dvanhorn@cedar.net>  
> Subject: [aprsspec] Re: Slightly OT  
> Date: Thu, 4 Nov 1999 21:18:49 -0500  
>  
> In communicating with a TNC, what's the largest "sentence" one can send  
> to/from the TNC, before encountering a <CR> or <LF>?  
> [...]

Well, that depends on which protocol you are using between the host and the TNC.

The maximum size of an AX.25 packet, ignoring flags and FCS, is:

|         |                                   |
|---------|-----------------------------------|
| Address | 70 bytes (10 addresses * 7 bytes) |
| Control | 1 byte                            |
| PID     | 1 byte                            |
| Info    | 256 bytes                         |
| ----    | -----                             |
| Total   | 328 bytes                         |

But, this answer makes sense only for KISS mode. Furthermore, you never need to encounter a <cr> or <lf>.

When receiving in TNC MONitor command format, one could construct an AX.25 packet with 10 addresses (source, destination, and 10 "via" addresses) and 256 bytes of data and get:

for each call:

|       |          |
|-------|----------|
| call  | 6 bytes  |
| "_"   | 1 byte   |
| ssid  | 2 bytes  |
| ">"   | 1 byte   |
| ----  | --       |
| Total | 10 bytes |

for a total of:

|         |                                              |
|---------|----------------------------------------------|
| Address | 111 bytes (10 addresses * 10 bytes plus "_") |
| Info    | 256 bytes                                    |
| ----    | ---                                          |
| Total   | 367 bytes                                    |

Or, you can make a bunch of assumptions that you won't ever get really big packets...

(These might make good packets for an APRS test suite.)

-tjs

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## 9. [aprsspec] Re: Slightly OT

From: Ian Wade <ian@dowmain.demon.co.uk>  
Date: Fri, 5 Nov 1999 06:05:43 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-48193-1999.11.05-00.29.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <005801bf2734\$19298f80\$0200a8c0@xemu>, Dave VanHorn <dvanhorn@cedar.net> writes  
>  
> I've got a note here that GPS NMEA sentences can be up to 82 chars long.  
> (yuk!)  
>

According to the Garmin 25 manual which contains the NMEA sentence details, the max lengths are as follows:

GGA 72

GSA 65  
GSV 210  
RMC 70  
VTG 34  
RME 36  
RMT 47  
RMV 26  
RMF 79  
GLL 36  
VTG 34

These include CR LF.

So I guess GSV (Satellites in View) is the one you have to allow for.

73  
Ian, G3NRW  
--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|                  email: g3nrw@arrl.net                |
|                                                        |
| INTRODUCTION TO APRS: http://www.netro.co.uk/whitepaper.htm |
| APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/aprswg.html |
+-----+
```

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## 10. [aprsspec] Re: Slightly OT

From: Dana Myers K6JQ <DMyers@QNET.COM>  
Date: Sun, 07 Nov 1999 19:20:37 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-48392-1999.11.08-08.43.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Tim Salo wrote:

```
>
> > From: "Dave VanHorn" <dvanhorn@cedar.net>
> > Subject: [aprsspec] Re: Slightly OT
> > Date: Thu, 4 Nov 1999 21:18:49 -0500
> >
> > In communicating with a TNC, what's the largest "sentence" one can send
> > to/from the TNC, before encountering a <CR> or <LF>?
> > [...]
>
> Well, that depends on which protocol you are using between the host
> and the TNC.
>
> The maximum size of an AX.25 packet, ignoring flags and FCS, is:
>
>      Address      70 bytes (10 addreses * 7 bytes)
>      Control      1 byte
>      PID          1 byte
>      Info         256 bytes
>      ----
>      Total        328 bytes
```

Technically speaking, there's nothing preventing one from receiving a very large frame, even if the frame is not strictly AX.25 compliant. I recall that some of the 56kb experimenters were interested (for fairly obvious reasons) in frames with a payload greater than 256 bytes.

Granted, you're not likely to find such frames on a common 1200 baud channel, but I recall that a number of TNCs are capable of sending frames larger than the AX.25-specified maximum. If a piece of software decides to send a frame larger than the max, the TNC is liable to comply.

> Or, you can make a bunch of assumptions that you won't ever get really  
> big packets...

Such assumptions should have a deterministic behavior when you \*do\* get a large frame (perhaps as a fluke). I'd suggest an assumption along the lines of "you don't have to process such frames", rather than "you'll never get 'em".

Dana K6JQ  
dana@source.net

---

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## 11. [aprsspec] Traffic data in Phoenix

From: "Shawn T. Rutledge" <[rutledge@cx47646-a.phnx1.az.home.com](mailto:rutledge@cx47646-a.phnx1.az.home.com)>  
Date: Sun, 7 Nov 1999 18:24:52 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [rustyc@inficad.com](mailto:rustyc@inficad.com)  
Message-ID: <[LYR11589-48449-1999.11.08-08.52.17--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-48449-1999.11.08-08.52.17--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

N7IKQ, KA7ZQL and myself are trying to put together a system to report Phoenix freeway traffic conditions on packet. Both of these gentlemen work for the AZ freeway management system division of ADOT and have gotten permission to do this. The data available consists of traffic volume and speed measurements every 1/3 of a mile by means of sensors embedded in the pavement; the text that is displayed on those orange message signs; info about onramp metering; and info about "incidents" (accidents, construction or other traffic snafus). Obviously some of this data fits well into existing APRS message types. I read the spec about a week ago and discovered the "traffic sign" type which had as an example usage, the speed of traffic past a certain point. However it bothers me that it is limited to 3 digits, and no way of specifying units, and how this info will be used by APRS clients is ambiguous. My expectation would be that a typical client would display it as if it really were a highway sign showing drivers their speed as they go by. However more data is available than just speed - we also can know the "occupancy" which is a measure of how bumper-to-bumper the traffic is; speed for each lane separately; and volume of cars per hour. At [azfms.com](http://azfms.com) there is a color-coded map showing different colors for different speed ranges and I would like to incorporate or see someone else incorporate that kind of display into an APRS client. But it must be possible to separate that kind of data from other measurements of congestion; perhaps the client would give a choice which measurement to use, or show multiple color codes at the same time. The client could also have a text display of just the upcoming situations which are relevant to the driver, for the next 5 or 10 miles in the direction he's headed; and this text could be spoken by a voice synthesizer whenever it changes.

Anyway I suppose the sign messages, and incident reports, would fit in more generically, but I didn't see a good way of sending different APRS messages for these two types of data, other than just prefixing the sign messages with "SIGN:" or something like that.

New measurements of speed etc. are available every 20 seconds. I am aware the typical APRS update frequency is 10 minutes and that more often would congest the frequency too much for its general-purpose nature, so we are thinking of using a separate frequency to send more detailed, frequent updates. I think in the interests of unification that I would like to try sending this data in XML format on the separate frequency (it would have seemed like a good idea anyway, but the DCC presentation on XML for APRS provided some more inspiration). Of course it will have to be a fairly compact form of XML (tags kept as short as possible) to fit in a 1200 baud channel, even assuming the channel is transmit-only and we can max out the available bandwidth. It appears that standard APRS messages are already too complex to decode easily (too few rules and too many exceptions) so stretching it even further to make new message formats to handle all the data types that are available would probably be a mistake. Trying to shoehorn the data into generic text messages would provide no incentive for APRS client software to try to display it more concisely as with color codes, and voice updates of only the data relevant to your position and direction, and things of that nature; you'd just end up with a screen full of icons and have to click on each one to find out what it says, and that would be useless if you are trying to drive at the same time. On the other hand it would be useful for APRS clients to be able to interpret the APRS XML DTD anyway, regardless what the source of that data is; and this might be the first on-air use of that DTD, with others following and having an extensible standard to work with rather than the ad-hoc APRS packet formats.

N7IKQ thinks the faster updates on the secondary channel should be by request only, in which case the channel would not be transmit-only, but the data sent could be targeted to what a particular user requested (give me the speed data for the next 5 miles of I-10 for example) rather than sending all the data all the time. Of course the more people are requesting data, this starts to become a losing proposition because most of the data needs to be sent anyway, yet we are also losing bandwidth to incoming requests and making the software more complex too.

In any case we want to provide whatever functionality that can fit into APRS protocol, on the normal APRS frequency so people don't have to use two channels at once if they don't want to.

Judging from the way APRS is used, there seems to be some loophole to get by the "no broadcasting" rule; I'm wondering what this is? Obviously the AX.25 "to" field is filled in but not usually with an individual ham's callsign. I don't want to raise a ruckus about that, just curious how it would be justified if the FCC asked.

I'm working with Linux of course, and this afternoon started with the beacon source code to find out how to open a socket and send packets. That's easy enough, now I just have to figure out what to send.

I'm open to suggestions on how to format the data, or otherwise.

```
---
_ _ _ _ _ http://www.bigfoot.com/~ecloud
( _ | | ) ecloud@bigfoot.com  finger rutledge@cx47646-a.phnx1.az.home.com
_ ) | | \_____
```

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## 12. [aprsspec] Re: Slightly OT

From: "Dave VanHorn" <dvanhorn@cedar.net>  
Date: Mon, 8 Nov 1999 09:31:02 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-48465-1999.11.08-09.46.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
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> Such assumptions should have a deterministic behavior when you \*do\* get a  
> large frame (perhaps as a fluke). I'd suggest an assumption along the  
lines  
> of "you don't have to process such frames", rather than "you'll never get  
'em".

It gets really fun when you try to think how to know where you are in all this, given that there's no real protocol, and all the control of the device is also in-band.

It's a lot like initializing a hayes modem. There's no way to do that, which will always work.  
My favorite Hayes-ism: "Restore to factory defaults".. As if that helps, given that there's no way to know what that is..

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## 13. [aprsspec] Re: Traffic data in Phoenix

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 8 Nov 1999 10:50:41 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>, rustyc@inficad.com  
Message-ID: <LYR11589-48476-1999.11.08-10.04.48--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Shawn,

The "Speed SIgn" in APRS is only the ICON display, the OBJECT itself still has the potential for having the 35 character "comment" field and if needed, the same "object" can send a full 63 character "STATUS" line as well.. Thus you have plenty of opportunity to embed other info in the object. Only the SPEED shows on the MAP ICON, but all the rest is displayed when you "click" on it...

Also, you can send general data as BULLETINS...

Or you can send "areas" which are boxes, triangles, circles and lines to enclose traffic congestion etc...

Does that help? I think the tools are mostly in there.. Just needs some creativity in sending the right packets...

Bob, WB4APR

On Sun, 7 Nov 1999, Shawn T. Rutledge wrote:

> N7IKQ, KA7ZQL and myself are trying to put together a system to report  
> Phoenix freeway traffic conditions on packet. Both of these gentlemen  
> work for the AZ freeway management system division of ADOT and have gotten  
> permission to do this. The data available consists of traffic volume and  
> speed measurements every 1/3 of a mile by means of sensors embedded in the  
> pavement; the text that is displayed on those orange message signs; info  
> about onramp metering; and info about "incidents" (accidents, construction  
> or other traffic snafus). Obviously some of this data fits well into  
> existing APRS message types. I read the spec about a week ago and discovered  
> the "traffic sign" type which had as an example usage, the speed of traffic  
> past a certain point. However it bothers me that it is limited to 3 digits,  
> and no way of specifying units, and how this info will be used by APRS  
> clients is ambiguous. My expectation would be that a typical client would  
> display it as if it really were a highway sign showing drivers their speed  
> as they go by. However more data is available than just speed - we also  
> can know the "occupancy" which is a measure of how bumper-to-bumper the  
> traffic is; speed for each lane separately; and volume of cars per hour.  
> At azfms.com there is a color-coded map showing different colors for  
> different speed ranges and I would like to incorporate or see someone else  
> incorporate that kind of display into an APRS client. But it must be possible  
> to separate that kind of data from other measurements of congestion;  
> perhaps the client would give a choice which measurement to use, or show  
> multiple color codes at the same time. The client could also have a  
> text display of just the upcoming situations which are relevant to the  
> driver, for the next 5 or 10 miles in the direction he's headed; and  
> this text could be spoken by a voice synthesizer whenever it changes.  
>  
> Anyway I suppose the sign messages, and incident reports, would fit in  
> more generically, but I didn't see a good way of sending different APRS  
> messages for these two types of data, other than just prefixing the sign  
> messages with "SIGN:" or something like that.  
>  
> New measurements of speed etc. are available every 20 seconds. I am aware  
> the typical APRS update frequency is 10 minutes and that more often would  
> congest the frequency too much for its general-purpose nature, so we are  
> thinking of using a separate frequency to send more detailed, frequent  
> updates. I think in the interests of unification that I would like to try  
> sending this data in XML format on the separate frequency (it would have  
> seemed like a good idea anyway, but the DCC presentation on XML for APRS  
> provided some more inspiration). Of course it will have to be a fairly  
> compact form of XML (tags kept as short as possible) to fit in a 1200  
> baud channel, even assuming the channel is transmit-only and we can max  
> out the available bandwidth. It appears that standard APRS messages  
> are already too complex to decode easily (too few rules and too many  
> exceptions) so stretching it even further to make new message formats  
> to handle all the data types that are available would probably be a mistake.  
> Trying to shoehorn the data into generic text messages would provide  
> no incentive for APRS client software to try to display it more concisely  
> as with color codes, and voice updates of only the data relevant to your  
> position and direction, and things of that nature; you'd just end up with  
> a screen full of icons and have to click on each one to find out what  
> it says, and that would be useless if you are trying to drive at the  
> same time. On the other hand it would be useful for APRS clients to  
> be able to interpret the APRS XML DTD anyway, regardless what the  
> source of that data is; and this might be the first on-air use of that  
> DTD, with others following and having an extensible standard to work with  
> rather than the ad-hoc APRS packet formats.  
>  
> N7IKQ thinks the faster updates on the secondary channel should be by request  
> only, in which case the channel would not be transmit-only, but the data  
> sent could be targeted to what a particular user requested (give me the  
> speed data for the next 5 miles of I-10 for example) rather than sending  
> all the data all the time. Of course the more people are requesting  
> data, this starts to become a losing proposition because most of the  
> data needs to be sent anyway, yet we are also losing bandwidth to incoming  
> requests and making the software more complex too.  
>  
> In any case we want to provide whatever functionality that can fit into  
> APRS protocol, on the normal APRS frequency so people don't have to use  
> two channels at once if they don't want to.  
>  
> Judging from the way APRS is used, there seems to be some loophole  
> to get by the "no broadcasting" rule; I'm wondering what this is?  
> Obviously the AX.25 "to" field is filled in but not usually with an  
> individual ham's callsign. I don't want to raise a ruckus  
> about that, just curious how it would be justified if the FCC asked.



```

>
> I'm working with Linux of course, and this afternoon started with the
> beacon source code to find out how to open a socket and send packets.
> That's easy enough, now I just have to figure out what to send.
>
> I'm open to suggestions on how to format the data, or otherwise.
> ---
>                                     http://www.bigfoot.com/~ecloud
> ( _ | | _ ) ecloud@bigfoot.com  finger rutledge@cx47646-a.phnx1.az.home.com
> _ ) | | \
>
> ---
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
>
>

```

APRSdos REPLY/COMMENT:

```

Reply mail addr:  wb4apr@amsat.org
US mail address:  115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY:  http://web.usna.navy.mil/~bruninga/dayton.html
See Maryland APRS LIVE:  http://web.usna.navy.mil/~bruninga/aprs.html
See GPS on ANY radio:  http://www.tapr.org/tapr/html/mic-e.html

```

```

---
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```

## 14. [aprsspec] Re: Traffic data in Phoenix

```

From: "Shawn T. Rutledge" <rutledge@cx47646-a.phnx1.az.home.com>
Date: Mon, 8 Nov 1999 11:03:37 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "Shawn T. Rutledge" <rutledge@cx47646-a.phnx1.az.home.com>,
    APRS Spec Discussion List <aprsspec@lists.tapr.org>,
    rustyc@inficad.com
Message-ID: <LYR11589-48489-1999.11.08-12.17.02--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

```

On Mon, Nov 08, 1999 at 10:50:41AM -0500, Bob Bruninga wrote:
> The "Speed Sign" in APRS is only the ICON display, the OBJECT itself
> still has the potential for having the 35 character "comment" field and
> if needed, the same "object" can send a full 63 character "STATUS" line

```

I guess I missed that.

```

> as well.. Thus you have plenty of opportunity to embed other info in the
> object. Only the SPEED shows on the MAP ICON, but all the rest is
> displayed when you "click" on it...
>
> Also, you can send general data as BULLETINS...
>
> Or you can send "areas" which are boxes, triangles, circles and lines
> to enclose traffic congestion etc...
>
> Does that help? I think the tools are mostly in there.. Just needs some
> creativity in sending the right packets...

```

Yes that helps.

```

>
> Bob, WB4APR
>
> On Sun, 7 Nov 1999, Shawn T. Rutledge wrote:
>
> > Judging from the way APRS is used, there seems to be some loophole
> > to get by the "no broadcasting" rule; I'm wondering what this is?
> > Obviously the AX.25 "to" field is filled in but not usually with an
> > individual ham's callsign. I don't want to raise a ruckus
> > about that, just curious how it would be justified if the FCC asked.

```

Any comments on this?

```

--
                                     http://www.bigfoot.com/~ecloud
( _ | | _ ) ecloud@bigfoot.com  finger rutledge@cx47646-a.phnx1.az.home.com
_ ) | | \
---

```

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---

## 15. [aprsspec] Re: Traffic data in Phoenix

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Mon, 08 Nov 1999 13:12:04 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, [rustyc@inficad.com](mailto:rustyc@inficad.com)  
Message-ID: <[LYR11589-48491-1999.11.08-12.23.43--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-48491-1999.11.08-12.23.43--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

"Shawn T. Rutledge" wrote:

>  
> > On Sun, 7 Nov 1999, Shawn T. Rutledge wrote:  
> >  
> > > Judging from the way APRS is used, there seems to be some loophole  
> > > to get by the "no broadcasting" rule; I'm wondering what this is?  
> > > Obviously the AX.25 "to" field is filled in but not usually with an  
> > > individual ham's callsign. I don't want to raise a ruckus  
> > > about that, just curious how it would be justified if the FCC asked.  
>  
> Any comments on this?

It seems to me this has been addressed before in the sense a packet "broadcast" still has a specific audience, hence it is not a "broadcast". I know this has been addressed in other UI modes of packet previous to APRS. I don't think you have much to worry about.

I think a bigger issue for you might be the usage of amateur frequencies by the Arizona Department of Transportation..., either directly or for there benefit.

-Jeff

---

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---

## 16. [aprsspec] Re: Traffic data in Phoenix

From: "Shawn T. Rutledge" <[rutledge@cx47646-a.phnx1.az.home.com](mailto:rutledge@cx47646-a.phnx1.az.home.com)>  
Date: Mon, 8 Nov 1999 11:53:56 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "Shawn T. Rutledge" <[rutledge@cx47646-a.phnx1.az.home.com](mailto:rutledge@cx47646-a.phnx1.az.home.com)>, APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, [rustyc@inficad.com](mailto:rustyc@inficad.com)  
Message-ID: <[LYR11589-48497-1999.11.08-13.07.22--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-48497-1999.11.08-13.07.22--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

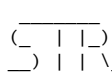
On Mon, Nov 08, 1999 at 01:12:04PM -0500, Jeff King wrote:

> "Shawn T. Rutledge" wrote:  
> > > On Sun, 7 Nov 1999, Shawn T. Rutledge wrote:  
> > >  
> > > > Judging from the way APRS is used, there seems to be some loophole  
> > > > to get by the "no broadcasting" rule; I'm wondering what this is?  
> > > > Obviously the AX.25 "to" field is filled in but not usually with an  
> > > > individual ham's callsign. I don't want to raise a ruckus  
> > > > about that, just curious how it would be justified if the FCC asked.  
> >  
> > Any comments on this?  
>  
> It seems to me this has been addressed before in the sense a packet "broadcast" still has a specific audience, hence it is not a "broadcast". I know this has been addressed in other UI modes of packet previous to APRS. I don't think you have much to worry about.  
>  
> I think a bigger issue for you might be the usage of amateur frequencies by the Arizona Department of Transportation..., either directly or for there benefit.

It doesn't benefit them in any way; they have landline and microwave networks for their own purposes. This is a service to us hams, being initiated by hams and with a ham in charge of it within the ADOT building where the antenna will be located. I don't see a problem with it. If the antenna being at their building were the source of a problem then

we could locate it elsewhere and send the data to the alternate location via the Internet.

--

 ecloud@bigfoot.com    finger rutledge@cx47646-a.phnx1.az.home.com    http://www.bigfoot.com/~ecloud

---

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---

## 17. [aprsspec] Re: Traffic data in Phoenix

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Mon, 08 Nov 1999 14:43:48 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, [rustyc@inficad.com](mailto:rustyc@inficad.com)  
Message-ID: <[LYR11589-48502-1999.11.08-13.55.25--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-48502-1999.11.08-13.55.25--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

"Shawn T. Rutledge" wrote:

> On Mon, Nov 08, 1999 at 01:12:04PM -0500, Jeff King wrote:  
>  
> > I think a bigger issue for you might be the usage of amateur frequencies by  
> > the Arizona Department of Transportation..., either directly or for there  
> > benefit.  
>  
> It doesn't benefit them in any way; they have landline and microwave  
> networks for their own purposes. This is a service to us hams,

Sorry about that then. I think its a good use.... you were just asking some basic questions so I mentioned this. The reason I did is we have a project exactly like that here in Detroit. It is funded by MDOT and sends the information on 220mhz (non amateur part of 220). What you described sounded like yet another travelers information service that the various DOT's have been funding as of late.

So I hope you understand my confusion of your intent.

-Jeff

---

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---

## 18. [aprsspec] Re: Traffic data in Phoenix

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 8 Nov 1999 14:56:26 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, [rustyc@inficad.com](mailto:rustyc@inficad.com)  
Message-ID: <[LYR11589-48503-1999.11.08-14.09.58--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-48503-1999.11.08-14.09.58--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 8 Nov 1999, Shawn T. Rutledge wrote:

> > > Judging from the way APRS is used, there seems to be some loophole  
> > > to get by the "no broadcasting" rule; I'm wondering what this is?  
> > > Obviously the AX.25 "to" field is filled in but not usually with an  
> > > individual ham's callsign. I don't want to raise a ruckus  
> > > about that, just curious how it would be justified if the FCC asked.

APRS is a network. Everyone transmits to everyone else in the network. Just like we do on any voice net...

bob

---

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---

## 19. [aprsspec] Use of GPSxyz codes - the ICON Rosetta table

From: Byron Smith <[wa6ylb@theworks.com](mailto:wa6ylb@theworks.com)>  
Date: Thu, 11 Nov 1999 18:14:26 -0800

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-49076-1999.11.11-20.35.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I've brought this subject up before as a problem , but now I have more information.

When you choose a GPS "C" group ICON for your tracker, please do so after reading this list below.

My recommendation, is to choose one that has ICON information that matches in all three flavors of APRS. I don't have any ICON information on other flavors of APRS.

Back in August (12th) I wrote to the aprssig mentioning that I was watching a tracker near Victorville sending packets with the "T0:" field of GPSC17, GPSC18 etc. I was using APRSdos at the time, and had recognized the code as ones seen in APRSplus icon table.

The problem was that APRSdos wasnt showing any ICON for these values. Only the callsign and speed/direction vector was showing.

APRSdos only mentions other ICONS, such as the M series (GPSCMx) and a list of them in APRS\README\Symbols.txt file.

I was advised that APRSDOS was suppose to decode these and I have confirmed that it does to a certain extent.

Bob B writes in a reply:

APRSdos is supposed to decode it. Ill check it...

Not knowing which GPSCxx codes work, and which dont, I wrote a program in my laptop to change the LTP setting in my mobile KPC3+ v8.3 tracker. The program changed the setting of LTP 1 to be GPSC00 through GPSC99 then beacons each value with real GPS live data on a different channel than 144.39 every 10 seconds.

I then watched and recorded what each of the ICON values did (over the air) in APRSdos 844, Winaprs 2.3.3 and APRSplus.

I have not done the same thing with the listed ICONS in Symbols.txt that comes with APRSdos. I'll do that another day.

Below is the results of running each GPSCxx code through each program. The biggest problem I came up with, is, APRSdos doesn't display ANYTHING as an ICON for a lot of "C" codes. Any place you see -- in the DOS collum, it means no ICON is displayed on the screen of APRSdos.

-----  
ICON displays for "C" group GPS tracker "T0:" addresses. See note 6 below for information about "E" group values.

| GPSCxx value | DOS Note 2         | Winaprs Note 2               | APRSplus note 2              |
|--------------|--------------------|------------------------------|------------------------------|
| 00           | --                 | Red circle with line thru it | Red circle with line thru it |
| 01           | Red diamond with ! | Diamond with P (police?)     | Triangle with !              |
| 02           | --                 | Rain                         | Rain                         |
| 03           | Digi star (small)  | Digi star (with hole)        | Digi Star                    |
| 04           | phone              | phone                        | Happy face                   |
| 05           | Phone              | DX                           | DX                           |
| 06           | Phone              | Gateway                      | Gateway                      |
| 07           | Plane (crashed?)   | Plane (small)                | plane                        |
| 08           | Handicap           | Clouds                       | Cloudy                       |
| 09           | --                 | TDB                          | TBD                          |
| 10           | Snowflakes         | Snowflakes                   | Snowflakes                   |
| 11           | House              | Red cross                    | Red Cross                    |
| 12           | Boy Scout (yellow) | Rev L shape                  | Rev L shape                  |
| 13           | House              | House/Vertical ant           | House/Vertical ant           |

|    |                                                          |                            |                          |
|----|----------------------------------------------------------|----------------------------|--------------------------|
| 14 | Question mark                                            | Large X cross              | Red/White/Blue USA       |
| 15 | small dot                                                | Red dot                    | red dot                  |
| 16 | dot with 0                                               | Circle black 0             | Square black 0           |
| 17 | --                                                       | Circle Brown 1             | Square brown 1           |
| 18 | --                                                       | Circle Red 2               | Square Red 2             |
| 19 | --                                                       | Circle Orange 3            | Square Orange 3          |
| 20 | --                                                       | Circle Yellow 4            | Square Yellow 4          |
| 21 | --                                                       | Circle Green 5             | Square Green 5           |
| 22 | --                                                       | Circle Blue 6              | Square Blue 6            |
| 23 | --                                                       | Circle Vio 7               | Square Vio 7             |
| 24 | --                                                       | Circle Gray 8              | Square Gray 8            |
| 25 | Video communicator?                                      | Circle White 9             | Square White 9           |
| 26 | Building on Fire                                         | Fire                       | Fire / Building          |
| 27 | Gray Tent                                                | Green Tent                 | Green Tent               |
| 28 | Bike Rider                                               | Motorcycle                 | Motorcycle               |
| 29 | train                                                    | train                      | Train                    |
| 30 | Auto                                                     | Red car                    | Red car                  |
| 31 | Question mark                                            | Position server            | Position server          |
| 32 | Gray dot - small                                         | Hurricane                  | Hurricane                |
| 33 | Block with "A"                                           | Blue Cross aid station     | Blue Cross aid station   |
| 34 | --                                                       | BBS                        | BBS                      |
| 35 | Canoe Green                                              | Canoe                      | Canoe                    |
| 36 | --                                                       | Square box with "D" Yellow | Circle (yellow) with "D" |
| 37 | Eyeball                                                  | Circle (green) with "E"    | Circle (green) with "E"  |
| 38 | --                                                       | Square (blue) with "F"     | Circle (blue) with "F"   |
| 39 | --                                                       | Grid Square (antenna)      | Grid Square (antenna)    |
| 40 | Bed                                                      | Hotel (bed)                | Hotel (bed)              |
| 41 | --                                                       | TCP                        | TCP/IP                   |
| 42 | --                                                       | J                          | Circle (black) with "J"  |
| 43 | School                                                   | Red School                 | Red School               |
| 44 | Lighthouse                                               | TCPIP                      | Lighthouse               |
| 45 | Mac LOGO                                                 | MAC LOGO                   | MAC LOGO                 |
| 46 | NTS                                                      | NTS                        | NTS                      |
| 47 | Balloon                                                  | Balloon                    | Balloon                  |
| 48 | Car                                                      | Car - Blue (police)        | Car - Blue (police)      |
| 49 | Earthquake - Gray                                        | TBD                        | Earthquake               |
| 50 | Restaurant                                               | RV (Capitol letters)       | RV (Capitol letters)     |
| 51 | Shuttle                                                  | Shuttle                    | Shuttle                  |
| 52 | --                                                       | SSTV (TV Screen)           | Thunderstorm             |
| 53 | Circle with three rays from it                           | BUS                        | BUS                      |
| 54 | ATV (tv Screen)                                          | ATV (tv screen)            | VORTAC                   |
| 55 | Double circle around W - callsign goofy See Note 4 below | Blue DOT with WX in middle | Dark Blue DOT with WX    |
| 56 | RX Pharmacy                                              | Helicopter                 | Helicopter               |
| 57 | Sail boat                                                | Sail boat / Yacht          | Sail boat                |
| 58 | Windows LOGO                                             | Windows LOGO               | Windows LOGO             |
| 59 | Runner                                                   | Runner                     | Runner                   |
| 60 | Yellow DF Triangle                                       | Yellow DF triangle         | Yellow DF triangle       |
| 61 | Small hollow square (could be letter)                    | MAIL                       | MAIL                     |
| 62 | crashed plane?                                           | Plane Large                | Plane                    |
| 63 | Blue WX dot                                              | Circle WX report           | Circle WX stn            |
| 64 | --                                                       | Dish on ground             | Dish on ground           |
| 65 | Ambulance                                                | Ambulance                  | Ambulance                |
| 66 | Bike                                                     | Bicycle                    | Bicycle                  |
| 67 | --                                                       | DX (antenna)               | DX (antenna)             |
| 68 | Fire Dept                                                | Fire Dept                  | Fire Dept                |
| 69 | --                                                       | Equestrian                 | Equestrian               |
| 70 | Fire Truck                                               | Fire Truck                 | Fire Truck               |
| 71 | Hang glider                                              | Hang Glider                | Hang Glider              |
| 72 | Hospital                                                 | Hospital                   | Hospital                 |
| 73 | (hard to tell)                                           |                            |                          |
| 73 | Island OTA                                               | Isaland OTA                | Island OTA               |
| 74 | Jeep See note 6                                          | Jeep see note 6            | Jeep see note 6          |
| 75 | Pickup                                                   | Pickup (red)               | Pickup                   |
| 76 | --                                                       | Red dot (areas)            | --                       |
| 77 | MIC E                                                    | MIC E (rptr)               | Red dot                  |
| 78 | --                                                       | N (node)                   | Mic E                    |
| 79 | EOC                                                      | EOC                        | EOC                      |
| 80 | --                                                       | Rover/Puppy                | Rover/Puppy              |
| 81 | Vertical line entire screen                              | Grid Square (antenna)      | Grid Square (antenna)    |
| 82 | MAN/Women (rest room?)                                   | Radio Antenna (yagi)       | Radio antenna            |
| 83 | Boat                                                     | Ship (pwr boat)            | Pwr boat                 |
| 84 | Ts (truck stop)                                          | TS (truck Stop)            | TS (Truck Stop)          |
| 85 | Truck                                                    | Truck 18 Wheel             | Truck 18 Wheel           |
| 86 | Van                                                      | Van                        | Van                      |

|    |                                               |                          |                      |
|----|-----------------------------------------------|--------------------------|----------------------|
| 87 | H2O                                           | H2O                      | H2O                  |
| 88 | Gray filled Diamond                           | Large X (Unix/Win)       | Large X (Unix/Win)   |
| 89 | House (yagi antenna)                          | House (yagi antenna)     | House (yagi antenna) |
| 90 | --                                            | No Sym Yet               | Blue hollow Diamond  |
| 91 | FOG (looks like<br>three Horizontal<br>lines) | No Sym Yet               | FOG (letters)        |
| 92 | --                                            | No Sym Yet               | Unsure what this is. |
| 93 | Hollow Diamond                                | Hollow Diamond           | TCP (letters)        |
| 94 | --                                            | No Sym Yet               | Sail boat            |
| 95 | --                                            | Red Square with Yellow ! | Bomb alert?          |
| 96 | --                                            | alert circles            | See note 1           |
| 97 | --                                            | alert circles            | See note 1           |
| 98 | --                                            | alert circles            | See note 1           |
| 99 | --                                            | alert circles            | See note 1           |

Notes:

1. APRSplus - There isn't any selection buttons for 96-99 inclusive
2. APRSdos - version 844, Winaprs 2.3.3, APRSplus version unknown, but aprox 6 months old.
3. APRSdos "--" icon means, that \*NO\* ICON was displayed on the screen at all. Only the  
callsign and RMC direction "spear" show.
4. GPSC55 doesn't display the callsign correctly in APRSdos 844. Its Jibberish.  
It looks to be part of a WX display instead of callsign.
5. The descriptions of all ICONS are subject to my interpretation, and I may have  
gotten clues from other versions of APRS as to what they might be. For some ICONS I just  
cant tell what they are.
6. There is a GPS "E" group shown in APRSplus Secondary table tab. Both Winaprs and APRSdos  
define all values of GPSE00 through GPSE99 as a "jeep" symbol, although there are many ICONS  
choices in APRSplus "E" group.

Byron Smith  
wa6ylb@theworks.com  
wa6ylb@wa6ylb.#nca.ca.usa.noam  
ICQ 26114994

<http://www.theworks.com/~wa6ylb>

"Luge strategy? Lie flat and try not to die."

---

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## 20. [aprsspec] Re: Use of GPSxyz codes - the ICON Rosetta table

From: PropNET <[propnet@greeceny.com](mailto:propnet@greeceny.com)>  
Date: Fri, 12 Nov 1999 06:24:47 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-49179-1999.11.12-05.39.39--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-49179-1999.11.12-05.39.39--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

What a f-a-n-t-a-s-t-i-c piece of work this is! Well done, Byron!

Now for an extension of the experiment...checking to see how javAPRS displays posit icons. Although anyone is welcome to beat me in the attempt, I will try (over the next couple 'o days) to launch gpsc## icons into the igate system, and view the result on the javAPRS system to see what happens...and add the results to the list, too. As an aside, one wonders that correlation exists among other gps### codes as well.

Again, well done, Byron!  
-=Ev, W2EV=-

Byron Smith wrote:

- > I've brought this subject up before as a problem , but now I have more
- > information.
- >
- > When you choose a GPS "C" group ICON for your tracker, please do so after

> reading this list below.  
>  
> My recommendation, is to choose one that has ICON information that matches  
> in all three flavors of APRS. I don't have any ICON information on other  
> flavors of APRS.  
>  
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> GPSC18 etc. I was using APRSdos at the time, and had recognized the code as  
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> The problem was that APRSdos wasnt showing any ICON for these values. Only  
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> speed/direction vector was showing.  
>  
> APRSdos only mentions other ICONS, such as the M series (GPSMx) and a list  
> of them in  
> APRS\README\Symbols.txt file.  
>  
> I was advised that APRSDOS was suppose to decode these and I have confirmed  
> that it does to a certain extent.  
>  
> Bob B writes in a reply:  
>  
> APRSdos is supposed to decode it. Ill check it...  
>  
> Not knowing which GPSCxx codes work, and which dont, I wrote a program in  
> my laptop to change the LTP setting in my mobile KPC3+ v8.3 tracker. The  
> program changed the setting of LTP 1 to be GPSC00 through GPSC99 then  
> beacons each value with real GPS live data on a different channel than  
> 144.39 every 10 seconds.  
>  
> I then watched and recorded what each of the ICON values did (over the air)  
> in APRSdos 844, Winaprs 2.3.3 and APRSplus.  
>  
> I have not done the same thing with the listed ICONS in Symbols.txt that  
> comes with APRSdos.  
> I'll do that another day.  
>  
> Below is the results of running each GPSCxx code through each program. The  
> biggest problem I came up with, is, APRSdos doesn't display ANYTHING as an  
> ICON for a lot of "C" codes. Any place you see -- in the DOS collum, it  
> means no ICON is displayed on the screen of APRSdos.  
>  
> -----  
> ICON displays for "C" group GPS tracker "TO:" addresses. See note 6 below  
> for information  
> about "E" group values.  
>  

| > GPSCxx value | > DOS Note 2          | > Winaprs Note 2                | > APRSplus note 2               |
|----------------|-----------------------|---------------------------------|---------------------------------|
| > 00           | --                    | Red circle with<br>line thru it | Red circle with<br>line thru it |
| > 01           | Red diamond<br>with ! | Diamond with P<br>(police?)     | Triangle with !                 |
| > 02           | --                    | Rain                            | Rain                            |
| > 03           | Digi star<br>(small)  | Digi star<br>(with hole)        | Digi Star                       |
| > 04           | phone                 | phone                           | Happy face                      |
| > 05           | Phone                 | DX                              | DX                              |
| > 06           | Phone                 | Gateway                         | Gateway                         |
| > 07           | Plane<br>(crashed?)   | Plane (small)                   | plane                           |
| > 08           | Handicap              | Clouds                          | Cloudy                          |
| > 09           | --                    | TDB                             | TBD                             |
| > 10           | Snowflakes            | Snowflakes                      | Snowflakes                      |
| > 11           | House                 | Red cross                       | Red Cross                       |
| > 12           | Boy Scout<br>(yellow) | Rev L shape                     | Rev L shape                     |
| > 13           | House                 | House/Vertical ant              | House/Vertical ant              |
| > 14           | Question mark         | Large X cross                   | Red/White/Blue USA              |
| > 15           | small dot             | Red dot                         | red dot                         |
| > 16           | dot with 0            | Circle black 0                  | Square black 0                  |
| > 17           | --                    | Circle Brown 1                  | Square brown 1                  |
| > 18           | --                    | Circle Red 2                    | Square Red 2                    |
| > 19           | --                    | Circle Orange 3                 | Square Orange 3                 |
| > 20           | --                    | Circle Yellow 4                 | Square Yellow 4                 |
| > 21           | --                    | Circle Green 5                  | Square Green 5                  |

|      |                                         |                            |                          |
|------|-----------------------------------------|----------------------------|--------------------------|
| > 22 | --                                      | Circle Blue 6              | Square Blue 6            |
| > 23 | --                                      | Circle Vio 7               | Square Vio 7             |
| > 24 | --                                      | Circle Gray 8              | Square Gray 8            |
| > 25 | Video communicator?                     | Circle White 9             | Square White 9           |
| > 26 | Building on Fire                        | Fire                       | Fire / Building          |
| > 27 | Gray Tent                               | Green Tent                 | Green Tent               |
| > 28 | Bike Rider                              | Motorcycle                 | Motorcycle               |
| > 29 | train                                   | train                      | Train                    |
| > 30 | Auto                                    | Red car                    | Red car                  |
| > 31 | Question mark                           | Position server            | Position server          |
| > 32 | Gray dot - small                        | Hurricane                  | Hurricane                |
| > 33 | Block with "A"                          | Blue Cross aid station     | Blue Cross aid station   |
| > 34 | --                                      | BBS                        | BBS                      |
| > 35 | Canoe Green                             | Canoe                      | Canoe                    |
| > 36 | --                                      | Square box with "D" Yellow | Circle (yellow) with "D" |
| > 37 | Eyeball                                 | Circle (green) with "E"    | Circle (green) with "E"  |
| > 38 | --                                      | Square (blue) with "F"     | Circle (blue) with "F"   |
| > 39 | --                                      | Grid Square (antenna)      | Grid Square (antenna)    |
| > 40 | Bed                                     | Hotel (bed)                | Hotel (bed)              |
| > 41 | --                                      | TCP                        | TCP/IP                   |
| > 42 | --                                      | J                          | Circle (black) with "J"  |
| > 43 | School                                  | Red School                 | Red School               |
| > 44 | Lighthouse                              | TCP/IP                     | Lighthouse               |
| > 45 | Mac LOGO                                | MAC LOGO                   | MAC LOGO                 |
| > 46 | NTS                                     | NTS                        | NTS                      |
| > 47 | Balloon                                 | Balloon                    | Balloon                  |
| > 48 | Car                                     | Car - Blue (police)        | Car - Blue (police)      |
| > 49 | Earthquake - Gray                       | TBD                        | Earthquake               |
| > 50 | Restaurant                              | RV (Capitol letters)       | RV (Capitol letters)     |
| > 51 | Shuttle                                 | Shuttle                    | Shuttle                  |
| > 52 | --                                      | SSTV (TV Screen)           | Thunderstorm             |
| > 53 | Circle with three rays from it          | BUS                        | BUS                      |
| > 54 | ATV (tv Screen)                         | ATV (tv screen)            | VORTAC                   |
| > 55 | Double circle around W - callsign goofy | Blue DOT with WX in middle | Dark Blue DOT with WX    |
| >    | See Note 4 below                        |                            |                          |
| > 56 | RX Pharmacy                             | Helicopter                 | Helicopter               |
| > 57 | Sail boat                               | Sail boat / Yacht          | Sail boat                |
| > 58 | Windows LOGO                            | Windows LOGO               | Windows LOGO             |
| > 59 | Runner                                  | Runner                     | Runner                   |
| > 60 | Yellow DF Triangle                      | Yellow DF triangle         | Yellow DF triangle       |
| > 61 | Small hollow square (could be letter)   | MAIL                       | MAIL                     |
| > 62 | crashed plane?                          | Plane Large                | Plane                    |
| > 63 | Blue WX dot                             | Circle WX report           | Circle WX stn            |
| > 64 | --                                      | Dish on ground             | Dish on ground           |
| > 65 | Ambulance                               | Ambulance                  | Ambulance                |
| > 66 | Bike                                    | Bicycle                    | Bicycle                  |
| > 67 | --                                      | DX (antenna)               | DX (antenna)             |
| > 68 | Fire Dept                               | Fire Dept                  | Fire Dept                |
| > 69 | --                                      | Equestrian                 | Equestrian               |
| > 70 | Fire Truck                              | Fire Truck                 | Fire Truck               |
| > 71 | Hang glider                             | Hang Glider                | Hang Glider              |
| > 72 | Hospital                                | Hospital                   | Hospital                 |
| >    | (hard to tell)                          |                            |                          |
| > 73 | Island OTA                              | Isaland OTA                | Island OTA               |
| > 74 | Jeep See note 6                         | Jeep see note 6            | Jeep see note 6          |
| > 75 | Pickup                                  | Pickup (red)               | Pickup                   |
| > 76 | --                                      | Red dot (areas)            | --                       |
| > 77 | MIC E                                   | MIC E (rptr)               | Red dot                  |
| > 78 | --                                      | N (node)                   | Mic E                    |
| > 79 | EOC                                     | EOC                        | EOC                      |
| > 80 | --                                      | Rover/Puppy                | Rover/Puppy              |
| > 81 | Vertical line entire screen             | Grid Square (antenna)      | Grid Square (antenna)    |
| >    |                                         |                            |                          |
| > 82 | MAN/Women (rest room?)                  | Radio Antenna (yagi)       | Radio antenna            |
| > 83 | Boat                                    | Ship (pwr boat)            | Pwr boat                 |
| > 84 | Ts (truck stop)                         | TS (truck Stop)            | TS (Truck Stop)          |
| > 85 | Truck                                   | Truck 18 Wheel             | Truck 18 Wheel           |
| > 86 | Van                                     | Van                        | Van                      |
| > 87 | H2O                                     | H2O                        | H2O                      |
| > 88 | Gray filled Diamond                     | Large X (Unix/Win)         | Large X (Unix/Win)       |
| > 89 | House (yagi antenna)                    | House (yagi antenna)       | House (yagi antenna)     |
| > 90 | --                                      | No Sym Yet                 | Blue hollow Diamond      |
| > 91 | FOG (looks like three Horizontal lines) | No Sym Yet                 | FOG (letters)            |
| >    |                                         |                            |                          |
| > 92 | --                                      | No Sym Yet                 | Unsure what this is.     |



```

> 93          Hollow Diamond          Hollow Diamond          TCP (letters)
> 94          --                      No Sym Yet              Sail boat
> 95          --                      Red Square with Yellow !    Bomb alert?
> 96          --                      alert circles              See note 1
> 97          --                      alert circles              See note 1
> 98          --                      alert circles              See note 1
> 99          --                      alert circles              See note 1
>
> Notes:
>
> 1. APRSplus - There isn't any selection buttons for 96-99 inclusive
> 2. APRSdos - version 844, Winaprs 2.3.3, APRSplus version unknown, but
>   aprox 6 months old.
> 3. APRSdos "--" icon means, that *NO* ICON was displayed on the screen at
>   all. Only the
>     callsign and RMC direction "spear" show.
> 4. GPSC55 doesn't display the callsign correctly in APRSdos 844. Its Jibberish.
>     It looks to be part of a WX display instead of callsign.
> 5. The descriptions of all ICONS are subject to my interpretation, and I
>   may have
>     gotten clues from other versions of APRS as to what they might be. For
>   some ICONS I just
>     cant tell what they are.
> 6. There is a GPS "E" group shown in APRSplus Secondary table tab. Both
>   Winaprs and APRSdos
>     define all values of GPSE00 through GPSE99 as a "jeep" symbol, although
>   there are many ICONS
>     choices in APRSplus "E" group.
>
> Byron Smith
> wa6ylb@theworks.com
> wa6ylb@wa6ylb.#nca.ca.usa.noam
> ICQ 26114994
>
> http://www.theworks.com/~wa6ylb
>
> "Luge strategy? Lie flat and try not to die."
>
> ---
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> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
--
PropNET: an automated network, designed to
study propagation anomalies.  Intreagued?
http://www.RochesterNY.org/PropNET

---
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```

## 21. [aprsspec] Re: Use of GPSxyz codes - the ICON Rosetta table

```

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Fri, 12 Nov 1999 06:26:15 -0800
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-49198-1999.11.12-08.39.43--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

With respect to APRS+SA, one can edit the files SYMBOLS.BMP and SYMBOLS2.BMP in the APRS+SA directory, and create any symbol for any icon you wish. Obviously, what you then see and what other see will be different if you do. The files are simple bitmaps 16x1538 pixels in size. A new icon every 16 pixels. In the future, I may compile them into a DLL, but for now, they are open.

Brent

```

> -----
> ICON displays for "C" group GPS tracker "T0:" addresses. See note 6 below
> for information
> about "E" group values.
>
> GPSCxx value DOS Note 2 Winaprs Note 2 APRSplus note 2
>
> 00 -- Red circle with Red circle with
>   line thru it line thru it
> 01 Red diamond Diamond with P Triangle with !

```

<much deleted>

---

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---

## 22. [aprsspec] Re: Use of GPSxyz codes - the ICON Rosetta table

From: Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Fri, 12 Nov 1999 12:10:12 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-49230-1999.11.12-11.23.56--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-49230-1999.11.12-11.23.56--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 11/12/99 6:24 AM PropNET ([propnet@greeceny.com](mailto:propnet@greeceny.com)) wrote:

>What a f-a-n-t-a-s-t-i-c piece of work this is! Well done, Byron!  
>  
>Now for an extension of the experiment...checking to see how javAPRS  
>displays posit icons. Although  
>anyone is welcome to beat me in the attempt, I will try (over the next  
>couple 'o days) to launch  
>gpsc## icons into the igate system, and view the result on the javAPRS  
>system to see what  
>happens...and add the results to the list, too. As an aside, one wonders  
>that correlation exists  
>among other gps### codes as well.  
>

First, if you do this, please make sure the positions are legit, rather than sending a couple hundred bogus positions. If you really want to do this, running javAPRS locally is a better answer.

However, doing this for javAPRS is largely a waste of time. I am well aware of the fact that the javAPRS icons are out of sync (as well as the fact that all the other versions are out of sync with each other). The underlying problem for this is the lack of a standard. Once this very time-consuming process is complete, the authors will be bringing their versions into alignment with the standard, the icons are only one small part of the work that will need to be done.

For javAPRS, the icons are in 4 GIF files (primary and secondary icon sets for light and dark backgrounds), each holding 96 different icons. The icons must be copied into the light background GIF, moved to the dark background GIF and edited to appear nice on the dark background. This is a slow, tedious process, and one I haven't done for years, which is why the icons are out of sync.

Anyone that wants to tackle this, please feel free!

Steve K4HG

---

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---

## 23. [aprsspec] Re: Use of GPSxyz codes - the ICON Rosetta table

<[LYR11591-49198-1999.11.12-08.39.43--msproul#apmail.ap.org@lists.tapr.org](mailto:LYR11591-49198-1999.11.12-08.39.43--msproul#apmail.ap.org@lists.tapr.org)>

From: Mark Sproul <[kb2ici@amsat.org](mailto:kb2ici@amsat.org)>  
Date: Fri, 12 Nov 1999 12:21:05 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-49232-1999.11.12-11.36.02--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-49232-1999.11.12-11.36.02--lyris.aprsspec#tapr.org@lists.tapr.org)>  
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>With respect to APRS+SA, one can edit the files SYMBOLS.BMP and  
>SYMBOLS2.BMP in the APRS+SA directory, and create any symbol for any icon  
>you wish. Obviously, what you then see and what other see will be different  
>if you do. The files are simple bitmaps 16x1538 pixels in size. A new icon  
>every 16 pixels. In the future, I may compile them into a DLL, but for now,  
>they are open.  
>  
>Brent  
>

Brent and others

In MacAPRS a user can go in with Resedit and change the icons, the same goes with WinAPRS if you have a development environment and the resource editor for windows applications. HOWEVER, this should NOT be encouraged. We need to have the icons the SAME on all of our platforms. Byron has done a wonderful job for all of us, we should all strive to make them the same. Now it does NOT require that your blue car look like my blue car, but they should BOTH should be "blue cars"

My \$0.02

Mark

---

PLEASE NOTE NEW EMAIL ADDRESS  
!!!!!!!!!!!!!!

msproul@apmail.ap.org

---

|                                 |                    |
|---------------------------------|--------------------|
| Mark Sproul                     |                    |
| Software Engineer @ Assoc Press | Work: 609-860-7120 |
| msproul@apmail.ap.org           | Fax: 609-860-7129  |

---

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## 24. [aprsspec] use of ECHO on HF

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Sat, 13 Nov 1999 20:31:50 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-49564-1999.11.13-19.47.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In the spec, there is discussion of the WIDE, TRACE, RELAY etc..

There is no discussion on ECHO.. This is STILL being used on HF, mostly by MOBILES.

I am -NOT- commenting on if this is correct or not, because I do not know.. If it IS supposed to still be used, it should be documented..

Bob, What say you? Again, I have not comment pro or con.

Keith  
Keith Sproul 732 445-3695 Office  
Student Housing Network Coordinator 732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/ WU2Z

---

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---

## 25. [aprsspec] Re: use of ECHO on HF

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 14 Nov 1999 08:19:27 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-49669-1999.11.14-07.33.31--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Good point. The use of "PATHS" is fundamental to APRS and is the number one question of newbees'. I can imagine tho, that others will say it should not be in the spec... But could it be an appendix or something?

I dont have spe c with me, but to the extent that W,R,T are in there, then ECHO should be too..

Bob

Sat, 13 Nov 1999, Keith Sproul wrote:

>

> In the spec, there is discussion of the WIDE, TRACE, RELAY etc..  
 >  
 > There is no discussion on ECHO.. This is STILL being used on HF,  
 > mostly by MOBILEs.  
 >  
 > I am -NOT- commenting on if this is correct or not, because I do not  
 > know.. If it IS supposed to still be used, it should be documented..  
 >  
 > Bob, What say you? Again, I have not comment pro or con.  
 >  
 > Keith  
 > Keith Sproul 732 445-3695 Office  
 > Student Housing Network Coordinator 732 445-2968 Fax  
 > mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
 > http://dorm.rutgers.edu/~ksproul/ WU2Z  
 >  
 > ---  
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 >  
 >

APRSDos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
 US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
 See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html  
 See Maryland APRS LIVE: http://web.usna.navy.mil/~bruninga/aprs.html  
 See GPS on ANY radio: http://www.tapr.org/tapr/html/mic-e.html

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## 26. [aprsspec] Re: use of ECHO on HF

From: Tim Salo <salo@networkcs.com>  
 Date: Mon, 15 Nov 1999 12:13:40 -0600 (CST)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-49984-1999.11.15-12.27.25--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

> Date: Sun, 14 Nov 1999 08:19:27 -0500 (EST)  
 > From: Bob Bruninga <bruninga@nadn.navy.mil>  
 > Subject: [aprsspec] Re: use of ECHO on HF  
 >  
 > Good point. The use of "PATHS" is fundamental to APRS and is the number  
 > one question of newbies'. I can imagine tho, that others will say it  
 > should not be in the spec... But could it be an appendix or something?  
 > [...]

A couple of thoughts:

- o The audience of an APRS specification should be developers, not users. The objective of the spec ought to be to enable the development of interoperable implementations. That is, it ought not be a tutorial, (which is not to say that a tutorial would not be valuable, merely that a tutorial ought to be a different document).
- o An APRS specification ought to specify the operation of digipeaters. As Bob observed, this is a fundamental part of the APRS system.
- o A good argument could be made that there should be several APRS specifications. This will allow the individual specifications to evolve independently. For example, the operation of digis might be more likely to evolve than the base protocol itself. It would be nice to release a new digi specification without having to release a new APRS protocol specification. Three specifications come to mind, I think there might be more:
  - APRS protocol
  - Digi and forwarding operations
  - IGate and APRServe operations

Note that an APRS station would need to implement portions of more than one document.

Somewhere, I wrote some boilerplate for an APRS specification that talks about such things as the objectives and audience of the spec. If I have a few hours, I will put it up on the Web.

-tjs

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# December 1999

Original source file: aprsspec.9912

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssidg/aprsspec/mail\\_archive/aprsspec.9912](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssidg/aprsspec/mail_archive/aprsspec.9912)

## 1. [aprsspec] APRS Protocol Spec Final Draft Published!

From: Greg Jones <wd5ivd@tapr.org>  
Date: Sat, 4 Dec 1999 22:44:26 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53300-1999.12.04-22.58.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

=====  
APRS PROTOCOL SPECIFICATION  
=====

TAPR announces release of the second public draft of  
the APRS Protocol Specification.  
-----

It's finally here! The APRS Working Group has completed the second  
public draft of the APRS Protocol Specification.

This document covers the core functionality of APRS Protocol Version  
1.0 as it works today. This is the base level specification that all  
implementations should comply with, and it was unanimously adopted by  
the Working Group members, who include the authors of APRS-DOS,  
WinAPRS, MacAPRS, X-APRS, PocketAPRS, APRS+SA, javAPRS, and APRServe,  
and the developers of the Mic-E and Pic-E products.

The Specification forms the basis for future Working Group projects,  
including APRS test suites and the APRS Certification Program. The  
WG also hopes to use this document as the basis for further speci-  
fications, including IGate and APRS digipeater operation.

Over the last 8 weeks the specification has grown from 18 pages to 93.  
It now includes packet format diagrams, the APRS symbol tables, full  
details of the Mic-E encoded format, the compressed lat/long position  
format, plus weather report and telemetry formats. Above all, the  
specification contains many examples of how APRS data is formatted to  
make it easier to understand.

The APRS Protocol Specification is now available on the APRS Working  
Group web page at: <http://www.tapr.org/tapr/html/Faprswg.html>.

It is available in PDF format, both zipped and unzipped. The zip file  
is  
a little under 1.5MB. You can read it with a PDF reader such as Adobe  
Acrobat 3 or 4.

This document is still a draft. There will now be a 15-day public  
discussion period in which anyone may feed back comments, criticisms  
and suggestions for improvement. Full information on how to do this is  
contained within the document.

The final cutoff for comment is midnight U.S. Pacific time on Sunday 19  
December (i.e. 0800 UTC on Monday 20 December).

After this date the Working Group will consider all the comments, and  
will issue the final approved version of the Specification as soon as  
possible thereafter.

John Ackermann, N8UR (jra@febo.com)  
Administrative Chair  
APRS Working Group  
4 December 1999

-----  
Tucson Amateur Packet Radio  
8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399  
-----

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## 2. [aprsspec] General- Hurricane Specs

From: "Dale Huguley" <kg5qd@worldnet.att.net>  
Date: Sun, 5 Dec 1999 12:43:04 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53337-1999.12.05-07.00.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi all- first of all I would like to express my appreciation for all the work in getting the draft into a very clear format.

I thought the purpose of this draft was to define the protocol as it exists- not change it.

The hurricane spec changes the order of the data in the pressure and wind field areas. This means to implement the draft a 100 % changeover in user software by the next hurricane season.

I have serious problems with what I consider "geocentric" definitions:

There are parts of the world that do not use "hurricane" for a severe tropical cyclone. They are called Typhoons, Tropical Cyclones, Severe Tropical Cyclones etc..

The winds are defined as MPH. This is a major problem due to the more universal standard being knots. Internally at the National Hurricane Center they use knots and only convert to MPH for "Public" statements designed for U.S. distribution. The vast majority of bulletins from Guam, Miami and Honolulu are in knots. If a user wants the winds to show in MPH, the display software should do the conversion.

Radius should be in Nautical Miles to be consistent with knots.

Drop the business about gusts being in the last 5 minutes- this is not real time data but estimates of winds possible (even in "present" positions)

Time should be the "Valid" time of the object- not the time received or transmitted

As to course and speed- Forward speed in knots - 000/000 = stationary  
.../... = no parse. There is a lot of difference between stationary and "I don't know"

73 de KG5QD Dale

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## 3. [aprsspec] ERROR: Flags byte in AX.25 frame should be 0x7E

From: Paul Keinanen <keinanen@sci.fi>  
Date: Sun, 05 Dec 1999 17:33:17 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53359-1999.12.05-09.46.13--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>This document is still a draft. There will now be a 15-day public  
>discussion period in which anyone may feed back comments, criticisms  
>and suggestions for improvement. Full information on how to do this is  
>contained within the document.

Hopefully this is the correct address to send contributions. The e-mail confirmation message, which I received when I joined the list did not specify the contribution address.

Chapter 3 "APRS and AX.25" states:

>0 Flag 0 The flag field at each end of the frame is the bit sequence 0x7f  
>that separates each frame.

The flag sequence in AX.25 is 01111110 (in binary), thus the hex value should be 0x7e

Paul OH3LWR

---

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#### 4. [aprsspec] UNCLEAR: Maidenhead locator

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Sun, 05 Dec 1999 18:19:13 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-53374-1999.12.05-10.32.13--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In chapter 6 "TIME AND POSITION FORMATS" it is stated

```
>Maidenhead
>Locator
>(Grid Square)
>An alternative method of expressing a station's location is to provide a
>Maidenhead locator (grid square), together with a Symbol Table Identifier
>and Symbol Code, in a Status Report or in Mic-E status text.
>
>For example:
>
>I091sx/-
>
>indicates a Dhouse at grid square I091sx.
```

If only 4 character locator is available, is it represented as

I091 /- or I091/-

If the 8 character locator is available (also known as microwave locator and recognised by IARU region I), can it be represented at all e.g.

I091sx36/-

The specification does not say, if the characters should be in upper and/or lower case or if a mixed case can be used. If mixed case can be used, which IMHO it should be, then such constructions as I091sX are legal and this should then be clearly stated, so that every implementor of receiving software remembers to check for both upper and lowercase characters.

Paul OH3LWR

---

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#### 5. [aprsspec] OMISSION: Glossary

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Sun, 05 Dec 1999 19:55:28 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-53384-1999.12.05-12.08.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The use of non-SI (US specific) measuring units in various messages will cause some problems in countries using SI units, in which the data is both originated and displayed in SI-units. Remembering what happened to Mars Climate Orbiter once again emphasis the need for correct conversions :-).

Eg. if the original data is in kilometers and the message is in miles and the transferred data is displayed in kilometers, due to the limited resolution in the mile representation, the displayed kilometer value may be one larger or smaller than the transmitted value.

The situation deteriorates even further, if different conversion factors are used in the encoding and decoding phase. Thus it is very important to specify the exact conversion factors to be used e.g. in the glossary, so that all implementations will use exactly the same definition. At least the following missing terms should be included in the glossary:



inch      1 inch =     0.0254 m  
feet      1 feet =    0.3048 m  
mile      1 mile = 1609.344 m

These are exact values as 1 inch is by definition 25.4 mm.

The conversion between Celsius and Fahrenheit should be defined in the glossary, so that every implementation does it properly.

> mph miles per hour (km/hour = mph \* 1.60935. m/sec = mph \* 0.447).

Exact values should be used, since they are available, thus

mph miles per hour (km/hour = mph \* 1.609344. m/sec = mph \* 0.44704).

>knots International nautical miles per hour (mph = knots \* 1.151).

The conversion from knots to m/s should also be specified e.g.

1 knot = 0.514444... m/s

>(International) Nautical Mile 6076.103 feet / 1852 meters.

The international nautical mile is 1852 meters or 1852/0.3048=6076.115485564 ft, thus even the second decimal in the glossary is wrong.

These comments may seem to someone to be just nit-picking and indeed, the last decimals are meaningless if the data source is in US units and the display is in SI or when the data source is in SI-units and the display in US-units, since typical sensors only have 2-3 digit precision.

However, when both the data source and display is in SI-units and the messages in US units then it is very important that the SI/US and US/SI conversion are performed using exactly the same constants. Why use invented inaccurate constants when exact values are available in many cases (thanks to the definition of an inch to be exactly 25.4 mm).

Paul OH3LWR

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## 6. [aprsspec] Comment on new specification

From: Bob Nielsen <[nielsen@primenet.com](mailto:nielsen@primenet.com)>  
Date: Sun, 5 Dec 1999 12:47:51 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-53420-1999.12.05-14.02.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

P. 2: Tucson is not spelled Tuscon.

--

Bob Nielsen, W6SWE (RN2)      Internet: [nielsen@primenet.com](mailto:nielsen@primenet.com)  
Tucson, AZ DM42nh            AMPRnet: [w6swe@w6swe.ampr.org](mailto:w6swe@w6swe.ampr.org)  
QRP-L #1985                    <http://www.primenet.com/~nielsen>

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## 7. [aprsspec] GENERAL: Character sets

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Sun, 05 Dec 1999 22:56:47 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-53429-1999.12.05-15.09.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The term "ASCII" is over-used and abused and can be used quite ambiguously, so it should be defined in the glossary to refer to ANSI X3.4 from 1968, or at least this is my interpretation from the context.

While the comment field in various messages can only contain printable

ASCII characters excluding | and ~, however in chapter 14 "MESSAGES, BULLETINS AND ANNOUNCEMENTS" nothing is said about allowed characters, thus | and ~ as well as 8 bit characters should be legal.

However, the Message-ID begins with "{", so I do not see how this can be properly distinguished from the situation, in which the message text contains the "{" character. Is it so that the preceding text can not contain a "{" character ?

The allowed characters for status report are not specified.

In chapter 18 "USER-DEFINED DATA FORMAT"

>Important Note: Although there is no restriction on the nature of user-defined  
>data, it is highly recommended that it is represented in printable 7-bit  
>ASCII character form.

Why this restriction ?

-----

The following discussion is not relevant to version 1.0 of the specification, but I think that some provisions should be made in version 1.0 in order to not make future expansions impossible.

While English is used quite commonly in international contacts between radio amateurs, English is far from the only language used by amateurs, especially in local VHF/UHF activities (e.g. voluntary search and rescue services), in which the local language is used.

Unfortunately the 7 bit ASCII (ANSI X3.4) is far from adequate for encoding of these local languages. For Latin based scripts (Western and Central Europe, North and South America) various national versions of the 7 bit ISO-646 has been used, in which #[\]^\_'\{\}~ characters are replaced with local variants. These national character sets have been used in amateur packet radio traffic, but is more or less obsolete in all other data processing these days.

Most data processing outside the US is done in various 8 bit variants of ISO-8859 for Latin, Cyrillic, Greek, Hebrew and Arabic. Unfortunately this seems to be too exotic for packet radio purposes, but should be adequate for local single language situations.

For multilingual communication, the rest of the world is moving towards 16 bit Unicode encoding. Unicode is the native character set of Windows CE and Windows NT, some degree of support on Windows 95/98 and various Unix dialects. Older platforms, such as MS-DOS could map at least some characters to the local code page.

There was even the UTF-7 specification (RFC 2152) that allowed transmission of Unicode over 7 bit mail gateways, but since all gateways in the Internet are nowadays 8 bit clean, there is no longer a need for 7 bit encoding, so the use of UTF-7 is no longer recommended.

A better encoding is UTF-8 (RFC 2279) which transfers 16 bit Unicode characters with 1-3 eight bit bytes. Traditional US-ASCII characters (0..127) are represented with one byte, accented Latin, Cyrillic, Greek etc. are represented with 2 bytes, while Far-East ideographs require 3 bytes.

As I said previously, these things do not belong to version 1.0 of the specification, but IMHO, version 1.0 should specify that the comment field and some other user entered text fields should be forwarded as 8 bit characters, even if all specifications currently calls for generating only 7 bit US-ASCII characters. The programmer should be aware that some day there might come 8 bit characters and it is not acceptable to simply mask of the MSB of each byte or use signed char in the C-programming language.

Paul OH3LWR

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## 8. [aprsspec] ERROR: typos

From: "James Ewen" <jewen@home.com>  
Date: Sun, 5 Dec 1999 17:35:40  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-53459-1999.12.05-17.50.09--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

typographic errors

pg. 4 pp. 3 s. 1 -> Mr Spocks - change to - Mr. Spocks (period missing)  
pg. 4 pp. 5 s. 1 -> This document is the result of inputs from many people,  
and collated and massaged by the APRS Working Group. - change to - This  
document is the result of input from many people, which have been collated  
and massaged by the APRS Working Group.  
pg. 4 pp. 5 s. 2 -> getting it on to the street. - change to - getting it  
onto the street.

GENERAL - color descriptors

pg. 47 object color table -> DOS conventions usually call colors  
BRIGHT/normal rather than normal/DIM  
I've never run across this before... It still conveys the same information.  
Some use the convention HIGH INTENSITY/ LOW INTENSITY.

UNCLEAR - pg. 32 - 33 DFS and NRQ definitions are a little obscure. Adding  
in a table showing the implementation would be helpful. Reference is made  
to the PHG table, but you need to change the power in watts to recieved S  
units. Add another table, it's not much space, and much easier than having  
to flip pages and convert the chart data in your head.  
No definition of the signal quality report is given. It defines legal  
values being in the range of 0-9 but not what they mean. Is 0 good or bad?  
Another table would be nice.

Excellent document overall, it's sure nice to have the information all in  
one spot and presented professionally. Thank you to all of the APRSWG and  
others who are working on this document and the REAL WORLD implementation  
of this protocol!

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## 9. [aprsspec] Re: UNCLEAR: Maidenhead locator

From: Paul Keinanen <keinanen@sci.fi>  
Date: Tue, 07 Dec 1999 23:14:56 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-53776-1999.12.07-15.27.47--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Sun, 05 Dec 1999 18:19:13 +0200, Paul Keinanen <keinanen@sci.fi>  
wrote:

>  
>In chapter 6 "TIME AND POSITION FORMATS" it is stated  
>  
>>Maidenhead  
>>Locator  
>>(Grid Square)  
>>An alternative method of expressing a station's location is to provide a  
>>Maidenhead locator (grid square), together with a Symbol Table Identifier  
>>and Symbol Code, in a Status Report or in Mic-E status text.  
>>  
>>For example:  
>>  
>>I091sx/-  
>>  
>>indicates a house at grid square I091sx.  
>  
>If only 4 character locator is available, is it represented as  
>  
>I091 /- or I091/-  
>  
>If the 8 character locator is available (also known as microwave  
>locator and recognised by IARU region I), can it be represented at all  
>e.g.  
>  
>I091sx36/-  
>  
>The specification does not say, if the characters should be in upper  
>and/or lower case or if a mixed case can be used. If mixed case can be

>used, which IMHO it should be, then such constructions as Io91sX are  
>legal and this should then be clearly stated, so that every  
>implementor of receiving software remembers to check for both upper  
>and lowercase characters.

I have studied the situation a bit more and tried to locate any primary documents.

Unfortunately I do not have the minutes of the meeting in Maidenhead 1980, but the next official document is the VHF-manager's handbook, of which only paper copies existed previously.

Fortunately it is now available on the net at <http://www.scit.wlv.ac.uk/vhfc/iaru.r1.vhfm.4e/index.html>, which seems to be quite up to date, including the micro-locator. The only thing that is missing, as far as I can tell, is that in IARU Region meeting this September in Lillehammer, Norway, it was agreed that the WGS-84 coordinate system should be used when determining the locator. WGS-84 is used on the GPS-system and the difference can be up to a few hundred meters from some national grid frames. But fortunately, this is of no consequence to the APRS message structures.

Following the links, the relevant part is

```
>2.Description of the Locator system
>
>   The Locator system is a grid system, allowing to give the location of a station by a code
>   consisting of six characters, viz. two capital letters, a two-digit number and, again, two
>   capital letters. For example : J031DG.
```

Thus, all the references to the J091sx example in the APRS specification is wrong, it should be J091SX.

Then there is the question of micro-locators eg. J091SX23, should this be allowed in APRS messages ?

I think it should be stated in the APRS specification that the locator should always be generated and transmitted/forwarded as upper case, but if lower case characters are received, they should be converted to upper case before any further processing.

In this way if some existing system generate locators in lower case, the data will still be understood and this non-standard practice will sooner or later fade away.

Paul OH3LWR

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## 10. [aprsspec] Destination field as "call"??

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Tue, 7 Dec 1999 22:51:50 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53822-1999.12.08-00.06.31--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53822-1999.12.08-00.06.31--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I would sincerely disagree with the use of the term "callsign" for the description of the contents of the destination field (page 13 and following).

A callsign is something assigned to an individual ham operator. These are not. The use of this term in the context of a UI destination field is, at the very least, confusing. When the term "callsign" is used without the modifier "destination address", it is often unclear WHICH callsign (operator's callsign or the destination address callsign) is being referenced. If the modifier has to be used to make it clear, then just refer to it as "destination address" and forget the callsign.

A much better term would be "network" or "net". It is far more descriptive of the function. There are probably other, maybe even more appropriate terms.

Jim Wagner  
Oregon Research Electronics  
-----

wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University

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A computer without Windows is like a cake without mustard. - anonymous

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## 11. [aprsspec] Destination field

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Tue, 7 Dec 1999 22:51:57 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53823-1999.12.08-00.07.11--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53823-1999.12.08-00.07.11--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On page 14 of the draft spec, in the section titled:

Generic APRS Callsigns with Symbols

It says:

APRS uses several of the above-listed generic callsigns in a special way to specify not only a callsign but also a display symbol:

GPSxyx Raw GPS NMEA packets  
GPSConn Raw GPS NMEA packets  
GPSEnn Raw GPS NMEA packets  
SPCxyz Raw GPS NMEA packets (special event)  
SYMxyz (to be decided)

Notwithstanding the "non-explanation" on page 75, it is totally unclear what function the "GPSConn" and "GPSEnn" callsigns (a term I use under protest) might have. Given the existence of GPSxyx (spelling error?), aren't these redundant? They certainly do complicate decoding!

Jim Wagner  
Oregon Research Electronics

---

wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University

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A computer without Windows is like a cake without mustard. - anonymous

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## 12. [aprsspec] test

From: Koellner Guenter <[Guenter.Koellner@icn.siemens.de](mailto:Guenter.Koellner@icn.siemens.de)>  
Date: Wed, 8 Dec 1999 07:09:44 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53826-1999.12.08-00.23.10--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53826-1999.12.08-00.23.10--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

test, sorry... i found nowhere else the email where to send the comments to  
aprs spec

vy 73, Guenter, DL4MEA

>  
> SIEMENS                           Information and Communication Networks  
>                                           Communication on Air  
> Günter Köllner                   Mobile Radio - Development  
>  
> Siemens AG  
> ICN CA MR E C3           Tel.           +49 89 - 722 - 41962  
> Hofmannstr.51           Fax           +49 89 - 722 - 22187  
> D-81359 Muenchen       Mail:   guenter.koellner@icn.siemens.de

>  
> <http://www.qsl.net/dl4mea>  
>  
>

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### 13. [aprsspec] several subjects

From: Koellner Guenter <[Guenter.Koellner@icn.siemens.de](mailto:Guenter.Koellner@icn.siemens.de)>  
Date: Wed, 8 Dec 1999 07:21:49 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53827-1999.12.08-00.35.16--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53827-1999.12.08-00.35.16--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello all,

this is my comment for the APRSSPEC:

ERROR: Closing Flag is 1 byte wide  
Ref.: APRSSPEC 1.0.1g, pg. 12:

The frame showing the number of bytes within an AX.25 frame shows the closing flag with two bytes, its correct only one byte.

SUGGESTION: UTC time and SI-units should be used, I agree to OH3LWR  
Ref.: all units and time formats in the document

OMMISSION: Power level must have wider range  
Ref.: APRSSPEC 1.0.1g, pg. 64:

Just a maximum of 810watts is too less. How should one report  $\sqrt{4000/10}$ .  
Please expand!  
Maybe it makes even more sense to state ERP there, not power, because ERP is that what is interesting...

One more comment to general will follow in a separate mail.

vy 73, Guenter, DL4MEA  
<http://www.qsl.net/dl4mea>

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### 14. [aprsspec] GENERAL: APRSSPEC 1.0.1g

From: Koellner Guenter <[Guenter.Koellner@icn.siemens.de](mailto:Guenter.Koellner@icn.siemens.de)>  
Date: Wed, 8 Dec 1999 07:31:59 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53829-1999.12.08-00.45.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53829-1999.12.08-00.45.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

hello all,

sorry if that was discussed earlier or elsewhere, I am not that up-to-date with APRS, but very interested:

Here in central europe we have a wide network of nodes and digipeaters which are mostly using FlexNet or other network systems. Standard digipeating is of course still supported, but it became very unusal.

Most conversation is done using converse nodes, such as WWCONVERSE which is supported by internet gateways, but there is another CONVERSE system based only on AX.25 networks. Both are about equal in their features.

I often thought that the best possibility for APRS to distribute the information wide and safe would be that the stations are all using one converse channel. By that, all constraints you are doing for networking in the protocol, it is all already done.

Let me explain it in an example: We have a VHF discussion channel on the

WWCONVERSE (ch.14345). During the leonides meteor shower over 100 radio amateurs joined and were available for all comments.

If such could be done for APRS message distribution, it would gain much because the range even all over the world (remember, its called WW-converse) would be available.

Not at least, we would change from an UI distribution to AX.25 acknowledged distribution, where the packets will become as short as possible, local acknowledged. The only thing we have to add then is a way of setting up the connection to the converse node. We should not talk about handover or such else, even when possible from the protocol, we have to deal with a wide variety of radios which could not be brought into a common behavior, I doubt.

How about such?

vy 73, Guenter, DL4MEA

```
> _____
> SIEMENS                Information and Communication Networks
>                               Communication on Air
> Günter Köllner          Mobile Radio - Development
>
> Siemens AG
> ICN CA MR E C3          Tel.             +49 89 - 722 - 41962
> Hofmannstr.51          Fax              +49 89 - 722 - 22187
> D-81359 Muenchen       Mail: guenter.koellner@icn.siemens.de
>
> http://www.qsl.net/dl4mea
>
>
```

---

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## 15. [aprsspec] Destination Field - Grid Square

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Tue, 7 Dec 1999 23:46:16 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53832-1999.12.08-01.01.02--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

It would appear that the draft spec does not permit gridsquare as a valid Destination Address data type. Is this correct?

Thanks

Jim Wagner  
Oregon Research Electronics

```
-----
wagnerj@proaxis.com      Tangent, Oregon 97389
KA7EHK@KC7KFE.OR.USA.NOAM near Corvallis OR, home of
ka7ehk@yahoo.com         Oregon State University
-----
```

A computer without Windows is like a cake without mustard. - anonymous

---

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---

## 16. [aprsspec] Re: GENERAL: APRSSPEC 1.0.1g

From: "Jeff King" <jeff@aerodata.net>  
Date: Wed, 8 Dec 1999 03:20:35 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53834-1999.12.08-02.47.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello Guenter:

----- Original Message -----

From: "Koellner Guenter" <Guenter.Koellner@icn.siemens.de>

>

> I often thought that the best possibility for APRS to distribute the

> information wide and safe would be that the stations are all using one  
> converse channel. By that, all constraints you are doing for networking in  
> the protocol, it is all already done.

EXACTLY. You of course speak of the ping-pong convers server and its descendents.

> Let me explain it in an example: We have a VHF discussion channel on the  
> WWCONVERSE (ch.14345). During the leonides meteor shower over 100 radio  
> amateurs joined and were available for all comments.

"The Digital VHF net"? How about channel 10151 for the APRS feed?

> If such could be done for APRS message distribution, it would gain much  
> because the range even all over the world (remember, its called WW-converse)  
> would be available.

In fact, some of us "outsiders" have tried this already with position reports. It works. One of the big advantages of this is the system is distributed and if one node goes down, the whole APRS world is not brought to its knees as compared to the present proprietary system. Plus its a open software model meaning development is typically faster.

>  
> Not at least, we would change from an UI distribution to AX.25 acknowledged  
> distribution, where the packets will become as short as possible, local  
> acknowledged. The only thing we have to add then is a way of setting up the  
> connection to the converse node. We should not talk about handover or such  
> else, even when possible from the protocol, we have to deal with a wide  
> variety of radios which could not be brought into a common behavior, I  
> doubt.

I'm not sure the convers mode is the best for a RF network however.... certainly for the internet protocol server (APRSSERVE). However, since the code is available for the convers node, it could be modified to support a broadcast mode.

>  
> How about such?

I think your best bet among existing GUI authors might be to talk with Roger Barker the author of UI View. I can't speak for him, but in my conversations with him he always seemed most interested in doing things the "right way" as opposed to the way everyone else does things.

73

Jeff wb8wka

P.S. For those interested in what a convers server looks like type the following into your telnet program:

telnet 44.102.16.21 3600

---

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---

## 17. [aprsspec] Re: several subjects

From: Paul Keinanen <keinanen@sci.fi>  
Date: Wed, 08 Dec 1999 10:56:47 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53835-1999.12.08-03.09.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Wed, 8 Dec 1999 07:21:49 +0100, Koellner Guenter  
<Guenter.Koellner@icn.siemens.de> wrote:

>SUGGESTION: UTC time and SI-units should be used, I agree to OH3LWR  
>Ref.: all units and time formats in the document

Let me put it this way, I would have very strongly objected the use of non-SI units and lack of support for any other language than English  
\_if\_ version 1.0 had been a specification for a new, non-existent



system. However, since APRS 1.0 specs is only documenting existing practice, so we have to work around existing problems and postpone improvements to the next version of the specification.

One would hope that version 2.0 would contain alternative syntaxes for SI units. For instance in the METAR aviation weather telegram it is possible to use both units. For instance Helsinki, Finland reports now EFHK 36010KT (360 degrees, 10 knots) while St. Petersburg, Russia reports ULLI 21004MPS (210 degrees, 4 m/s). In this way, there will not be any cumulative conversion errors, since the only conversion is done by the software displaying the data in any user selectable format. I was a bit surprised that APRS uses miles/h to report wind and not knots, thus there is going to be quite large errors when converting wind data from METAR to APRS.

Paul OH3LWR

---

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---

## 18. [aprsspec] Re: several subjects

From: Keith Sproul <[ksproul@vger.rutgers.edu](mailto:ksproul@vger.rutgers.edu)>  
Date: Wed, 8 Dec 1999 07:28:03 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <LYR11589-53840-1999.12.08-06.44.02--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

You are absolutely correct.. The CURRENT document, (1.0) was specifically to document the CURRENT protocol so we had a solid starting point to enable changes and improvements as we go on...

One of the things we are working on within WinAPRS/MacAPRS/X-APRS is the ability to display different units. We have some of this workign already, and need to get it working more consistently throughout the program.

Keith Sproul

>On Wed, 8 Dec 1999 07:21:49 +0100 , Koellner Guenter  
><[Guenter.Koellner@icn.siemens.de](mailto:Guenter.Koellner@icn.siemens.de)> wrote:  
>  
>  
> >SUGGESTION: UTC time and SI-units should be used, I agree to OH3LWR  
> >Ref.: all units and time formats in the document  
>  
>Let me put it this way, I would have very strongly objected the use of  
>non-SI units and lack of support for any other language than English  
>\_if\_ version 1.0 had been a specification for a new, non-existent  
>system. However, since APRS 1.0 specs is only documenting existing  
>practice, so we have to work around existing problems and postpone  
>improvements to the next version of the specification.  
>  
>One would hope that version 2.0 would contain alternative syntaxes for  
>SI units. For instance in the METAR aviation weather telegram it is  
>possible to use both units. For instance Helsinki, Finland reports now  
>EFHK 36010KT (360 degrees, 10 knots) while St. Petersburg, Russia  
>reports ULLI 21004MPS (210 degrees, 4 m/s). In this way, there will  
>not be any cumulative conversion errors, since the only conversion is  
>done by the software displaying the data in any user selectable  
>format. I was a bit surprised that APRS uses miles/h to report wind  
>and not knots, thus there is going to be quite large errors when  
>converting wind data from METAR to APRS.  
>  
>Paul OH3LWR  
>

Keith Sproul                      732 445-3695 Office  
Student Housing Network Coordinator    732 445-2968 Fax  
<mailto:ksproul@rci.rutgers.edu>        732 821-4828 Home  
<http://dorm.rutgers.edu/~ksproul/>    WU2Z

---

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## 19. [aprsspec] Re: several subjects

From: Steve Dimse <sdimse@netrox.net>  
Date: Wed, 8 Dec 1999 08:16:12 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53845-1999.12.08-07.30.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>>SUGGESTION: UTC time and SI-units should be used, I agree to OH3LWR  
>>Ref.: all units and time formats in the document  
>  
>Let me put it this way, I would have very strongly objected the use of  
>non-SI units and lack of support for any other language than English  
>\_if\_ version 1.0 had been a specification for a new, non-existent  
>system. However, since APRS 1.0 specs is only documenting existing  
>practice, so we have to work around existing problems and postpone  
>improvements to the next version of the specification.  
>  
Since, in general, the actual packets are not looked at by humans, it  
doesn't matter what the units are. They can be converted and displayed in  
any units a programmer wants. All that matters is that everyone agree on  
what the units are. That is the purpose of the spec.

At this point, changing the units in version 2 would result in a (likely  
temporary) worsening of the situation, since a change like this would  
effectively double the number of packets a program must parse. If and  
when the subject comes up in the future, I will argue strongly against  
making such a change...

Steve K4HG

---

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## 20. [aprsspec] ERROR/CORRECTION?

From: Boyd Prestwood K5YKG <k5ykg@bellatlantic.net>  
Date: Wed, 08 Dec 1999 10:19:17 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53860-1999.12.08-09.33.56--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Re: Draft Version 1.0.1g (12/03/99)  
Page 53 - STORM DATA

The format of the chart appears to be incorrect based on the format described in  
WX.TXT of WB4APR's APRSdos. I know the WX.TXT format works as I've used it for 7  
years to report the storms.

Is page 53 in error or is the format being changed?

The WX.TXT format is:

CSE/SPD/HC/www^GGG/ppp>RRR&rrr

The New SPEC shows:

CSE/SPD/HC/www^ggg>RRR&rrr/ppp

Point: The RADIUS indicators and the PRESSURE indicator are reversed...

This is a great piece of documentation!  
Thanks for listening es good luck.  
73 de Boyd Prestwood K5YKG  
Southern New Jersey

---

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## 21. [aprsspec] GENERAL: Math Symbology

From: "Sampson, Steve -(TRW)TAFB/B2" <steve.sampson@b2mx.tinker.af.mil>  
Date: Wed, 8 Dec 1999 09:21:31 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53861-1999.12.08-09.36.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

1. I am in favor of changing the B.A.S.I.C. examples to real math symbols.

Discussion:

When I see SQR I think square, but in this case it really means sqrt().  
Also  
there is some exponential's that are confusing. On page 33 for example  
there  
is a  $1.08 \times 10^{-1}$  Further examples verify that it uses normal precedence,  
but  
use of parenthesis could make the math clear without examples. Real math  
symbology would be in line with the goals specified (to not be "dry as  
dust").

73,  
Steve

---

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---

## 22. [aprsspec] GENERAL: WIDEN-N

From: "Sampson, Steve -(TRW)TAFB/B2" <[steve.sampson@b2mx.tinker.af.mil](mailto:steve.sampson@b2mx.tinker.af.mil)>  
Date: Wed, 8 Dec 1999 09:34:00 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53862-1999.12.08-09.48.38--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53862-1999.12.08-09.48.38--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

It's not obvious in the description of WIDEN-N on page 11 that  
n and N should initially be the same. That the first n is used to  
determine the packet time to live (TTL).

73,  
Steve

---

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## 23. [aprsspec] Re: Destination Field - Grid Square

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 8 Dec 1999 10:34:51 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53863-1999.12.08-09.50.01--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53863-1999.12.08-09.50.01--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Tue, 7 Dec 1999, Jim Wagner wrote:

> It would appear that the draft spec does not permit gridsquare as a valid  
> Destination Address data type. Is this correct?

All authors agreed to drop that existing method as being obsolete. it is  
cumbersome to implement, sinc it is placing data in the Destination  
address field. Requires KISS mode to do it effectively, and also the  
Kenwood radios would ignore the packet. THus we came up with the  
gird-in-status format that can be received backwards compatible to all  
systems...

bob

---

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---

## 24. [aprsspec] Re: several subjects

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 8 Dec 1999 10:44:29 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53867-1999.12.08-09.59.42--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53867-1999.12.08-09.59.42--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Wed, 8 Dec 1999, Paul Keinanen wrote:

- > Let me put it this way, I would have very strongly objected the use of
- > non-SI units and lack of support for any other language than English
- > \_if\_ version 1.0 had been a specification for a new, non-existent
- > system. However, since APRS 1.0 specs is only documenting existing
- > practice, so we have to work around existing problems and postpone
- > improvements to the next version of the specification.

True. Historically, formats needed to be human readable back 8 years ago to give APRS backwards compatibility with people running conventional packet without APRS software. But we stuck with those formats since these days the users always uses APRS software on receipt, and that software can do any needed conversions to what ever the user desires. There is no need to encumber the on air format with multiple units, but I do agree in the posting that the standard conversion factors be included in the spec...

bob

---

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---

## 25. [aprsspec] Re: GENERAL: WIDEn-N

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 8 Dec 1999 11:00:22 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53868-1999.12.08-10.15.02--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53868-1999.12.08-10.15.02--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Wed, 8 Dec 1999, Sampson, Steve -(TRW)TAFB/B2 wrote:

- > It's not obvious in the description of WIDEn-N on page 11 that
- > n and N should initially be the same. That the first n is used to
- > determine the packet time to live (TTL).

Actually, I guess the final -N is the TTL, and the initial n is just a record copy so that when it arrives, you know what it was when it started... Thus you know the number of hops...

---

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## 26. [aprsspec] Units (was "several subjects")

From: Ian Wade <[ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)>  
Date: Wed, 8 Dec 1999 16:05:51 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-53872-1999.12.08-10.23.00--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-53872-1999.12.08-10.23.00--lyris.aprsspec#tapr.org@lists.tapr.org)>  
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In article <[LYR11659-53845-1999.12.08-07.30.53--ian#dowrmain.demon.co.uk@lists.tapr.org](mailto:LYR11659-53845-1999.12.08-07.30.53--ian#dowrmain.demon.co.uk@lists.tapr.org)>, Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)> writes

- > Since, in general, the actual packets are not looked at by humans, it
- > doesn't matter what the units are. They can be converted and displayed in
- > any units a programmer wants. All that matters is that everyone agree on
- > what the units are. That is the purpose of the spec.
- >

That's correct. The spec covers the \*ON-AIR\* data formats, not the application display formats. It's up to the application to perform the necessary units conversions to suit the user's preferences.

BTW, somebody said there might be inaccuracies in converting between one set of units and another. In fact, the conversions can be made as accurate or as inaccurate as you like -- that's an application issue. Much more important is to realize that the original data may itself be very inaccurate (for example, there may easily be a 10% error in some weather station readings, so there's no point in worrying about a 1% error in units conversion). [1]

It's true that there is a crazy mixup of units in the protocol, arising mostly from different data sources generating outputs in different units

(and partly for no apparent good reason at all). It doesn't look pretty in some places, but we're stuck with it in the \*ON-AIR\* protocol. There would be one heck of a backward compatibility problem if we changed the on-air formats now.

[1] This reminds me of the situation in England several years ago, when the government of the day threatened to metricate everything. Enterprising roadsign manufacturers started producing dual-standard signs, showing something like a (very approximate) distance of 1 mile, together with the (very accurate) metric equivalent of 1.60953 km .... They didn't last long.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|                               email: g3nrw@arrl.net       |
|                               |                           |
| APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/Faprswg.html|
+-----+
```

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## 27. [aprsspec] Re: several subjects

From: Paul Keinanen <keinanen@sci.fi>  
Date: Wed, 08 Dec 1999 21:06:08 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-53883-1999.12.08-13.19.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Wed, 8 Dec 1999 08:16:12 -0500, Steve Dimse <sdimse@netrox.net>  
wrote:

>>>SUGGESTION: UTC time and SI-units should be used, I agree to OH3LWR  
>>>Ref.: all units and time formats in the document  
>>  
>>Let me put it this way, I would have very strongly objected the use of  
>>non-SI units and lack of support for any other language than English  
>>\_if\_ version 1.0 had been a specification for a new, non-existent  
>>system. However, since APRS 1.0 specs is only documenting existing  
>>practice, so we have to work around existing problems and postpone  
>>improvements to the next version of the specification.  
>>  
>Since, in general, the actual packets are not looked at by humans, it  
>doesn't matter what the units are. They can be converted and displayed in  
>any units a programmer wants. All that matters is that everyone agree on  
>what the units are. That is the purpose of the spec.

This is only true as long as the transfer encoding has more precision  
than the display format. In this way the displayed data can be rounded  
properly and in most cases the last digit is displayed correctly.

Thus feet is a usable encoding if the (source and) display format is  
in feet or meters (but not if the display unit is 0.1 m).

However mile is not a good transfer encoding if the (source and)  
display format is either miles or kilometers, in this case kilometer  
would be a better encoding. If you insist on using imperial units,  
then the transfer encoding should be in 1/2 miles (whatever that is  
called, but most likely that also has a name :-).

No matter what the transfer encoding is, the goal should be that the  
displayed value is identical in all places and displayable with  
comparable resolution as the data source.

Paul OH3LWR

---
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## 28. [aprrspec] Re: Destination Field - Grid Square

From: "Ev Tupis (W2EV)" <propnet@greeceney.com>  
Date: Wed, 08 Dec 1999 23:03:27 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-54151-1999.12.08-22.19.39--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Please, I don't mean to come off as argumentative, but I was under the impression that the APRSpec was intended to document what is \*presently\* supported, not what is agreed to for the future. As such the "Grid-in-T0" format should be there.

To be fair, I haven't fully read through the spec document, so I may be commenting out of context (is "Grid in Destination Field" the same as "Grid in To"?). Even so, version 1.0 should, according to the charter of the APRSpec activity, document what exists now, rather than what today's authors have agreed to for the future.

Ev, W2EV

> > It would appear that the draft spec does not permit gridsquare as a valid  
> > Destination Address data type. Is this correct?  
>  
> ALL authors agreed to drop that existing method as being obsolete. it is  
> cumbersome to implement, sinc it is placing data in the Destination  
> address field. Requires KISS mode to do it effectively, and also the  
> Kenwood radios would ignore the packet. THus we came up with the  
> gird-in-status format that can be received backwards compatible to all  
> systems...  
>  
> bob  
>  
> ---  
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> To unsubscribe send a blank email to leave-aprrspec-11589P@lists.tapr.org

--  
PropNET: an automated network, designed to  
study propagation anomalies. Intreagued?  
<http://www.RochesterNY.org/PropNET>

---  
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---

## 29. [aprrspec] Re: Destination Field - Grid Square

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 9 Dec 1999 08:54:12 -0500 (EST)  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-54281-1999.12.09-08.08.56--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Wed, 8 Dec 1999, Ev Tupis (W2EV) wrote:

> Please, I don't mean to come off as argumentative, but I was under the  
> impression that the APRSpec was intended to document what is \*presently\*  
> supported, not what is agreed to for the future. As such the "Grid-in-T0"  
> format should be there.  
>  
> To be fair, I haven't fully read through the spec document, so I may be  
> commenting out of context (is "Grid in Destination Field" the same as "Grid in  
> To"?). Even so, version 1.0 should, according to the charter of the APRSpec  
> activity, document what exists now, rather than what today's authors have  
> agreed to for the future.

Well, you make a good point, but putting in a format that is obsolete, and incompatible with the largest segment of APRS (Thousands of THD7's, that is larger than all registered copies of all versions of ARPS combined), did not seem to make sense. We did not want to encourage continued use of such a format... But maybe we should have put it in and marked it as obsolete...

Bob

---

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---

### 30. [aprsspec] Re: Destination Field - Grid Square

From: Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)>  
Date: Thu, 9 Dec 1999 16:57:37 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54344-1999.12.09-16.15.41--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54344-1999.12.09-16.15.41--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 12/8/99 11:03 PM Ev Tupis (W2EV) ([propnet@greeceny.com](mailto:propnet@greeceny.com)) wrote:

>Please, I don't mean to come off as argumentative, but I was under the  
>impression that the APRSspec was intended to document what is \*presently\*  
>supported, not what is agreed to for the future. As such the "Grid-in-T0"  
>format should be there.  
>

The authors had previously discussed and agreed that this format was  
obsolete and was to be phased out. The user-defined format, and the  
base-91 format are other example of things which were not used or  
documented previously, but which had been agreed to by the authors prior  
to the formation of the APRSWG.

I think rather than "what is currently supported", "what is currently  
accepted" would be a more accurate description of the document...

Steve K4HG

---

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---

### 31. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Fri, 10 Dec 1999 11:34:03 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54419-1999.12.10-03.46.53--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54419-1999.12.10-03.46.53--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Thu, 9 Dec 1999 16:57:37 -0500, Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)> wrote:

>On 12/8/99 11:03 PM Ev Tupis (W2EV) ([propnet@greeceny.com](mailto:propnet@greeceny.com)) wrote:  
>  
>>Please, I don't mean to come off as argumentative, but I was under the  
>>impression that the APRSspec was intended to document what is \*presently\*  
>>supported, not what is agreed to for the future. As such the "Grid-in-T0"  
>>format should be there.  
>>  
>The authors had previously discussed and agreed that this format was  
>obsolete and was to be phased out. The user-defined format, and the  
>base-91 format are other example of things which were not used or  
>documented previously, but which had been agreed to by the authors prior  
>to the formation of the APRSWG.

So, base-91 is not currently a widely implemented feature.

I did not find a motivation in the document why such an obscure  
encoding was invented, so could some please explain the motivation  
behind it.

The base-91 encoding is clearly not intended for direct consumption,  
so if your aim is to reduce the transmitted AX.25 frame length, why  
not go directly to binary representation, in which you can represent  
256 different values in a single byte or 65536 different values can be  
used with two bytes.

The AX.25 protocol allows all 256 values in an octet, so there should  
be no need for such things as base-91. I know, there are bad  
\_implementations\_ that strips the most significant byte or use some  
bit combinations for flow control or mode switching.

IMHO, it is a scandalous that the packet network is not 8 bit  
transparent in 1999. Designing all new protocols in this limitation in  
mind, will result that there is no motivation for updating equipment  
to be 8 bit clean. If some popular application will require 8 bit  
transparent transfer that will motivate upgrading systems.

In this case there is a well established non-compressed format, so this transition from non-compressed 7 bit human readable format to 8 bit transparent compressed format can be done in each area when there is a sufficient number of equipment supporting the compressed format. As a final result, the packet network will be 8 bit transparent, which will also benefit other applications.

A similar example is the internet e-mail, which in the rest of the world has been 8 bit clean for years, only sites in UK and the US did not want to upgrade. Fortunately the sendmail application was full of security holes, so all sites had to upgrade to newer versions that as a byproduct were 8 bit clean :-).

Paul OH3LWR

---

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## 32. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)>  
Date: Fri, 10 Dec 1999 09:29:07 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54431-1999.12.10-08.48.29--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54431-1999.12.10-08.48.29--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 12/10/99 4:34 AM Paul Keinanen ([keinanen@sci.fi](mailto:keinanen@sci.fi)) wrote:

>So, base-91 is not currently a widely implemented feature.

>

No, but it has been implemented in the new Kenwood D700, which makes it "cast in stone" as far as we are concerned.

>I did not find a motivation in the document why such an obscure  
>encoding was invented, so could some please explain the motivation  
>behind it.

>

>...

>The AX.25 protocol allows all 256 values in an octet, so there should  
>be no need for such things as base-91. I know, there are bad  
>\_implementations\_ that strips the most significant byte or use some  
>bit combinations for flow control or mode switching.

>

So you answered your own question. 91 characters are the most contiguous values that are guaranteed to be passed through all TNCs.

>IMHO, it is a scandalous that the packet network is not 8 bit  
>transparent in 1999. Designing all new protocols in this limitation in  
>mind, will result that there is no motivation for updating equipment  
>to be 8 bit clean. If some popular application will require 8 bit  
>transparent transfer that will motivate upgrading systems.

>

The trouble is hams are cheap. Many will leave the hobby before they will spend real cash. There are too few hams already, we want to do everything we can to encourage people to use APRS. APRS is designed to be used with older equipment, because many hams have old TNCs laying around their house, they can dust them off and get on the air.

So be scandalized, but maintaining compatibility with as much equipment and software as possible is a guiding principle of APRS.

Steve K4HG

---

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## 33. [aprsspec] RE: several subjects

From: "Sampson, Steve -(TRW)TAFB/B2" <[steve.sampson@b2mx.tinker.af.mil](mailto:steve.sampson@b2mx.tinker.af.mil)>  
Date: Fri, 10 Dec 1999 09:58:40 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54442-1999.12.10-10.13.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54442-1999.12.10-10.13.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

>Since, in general, the actual packets are not looked at by humans, it  
>doesn't matter what the units are.



This is reasonable. APRS-NG can set a goal of SI double precision, but you will have to learn French, and use kilometres :-)

73,  
Steve, K5OKC

---

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---

### 34. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Fri, 10 Dec 1999 19:32:03 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54473-1999.12.10-13.53.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR11659-54419-1999.12.10-03.46.53--ian#dowrmain.demon.co.uk@lists.tapr.org>, Paul Keinanen <keinanen@sci.fi> writes

>I did not find a motivation in the document why such an obscure  
>encoding was invented, so could some please explain the motivation  
>behind it.

Base 91 is a neat trick to ensure that on-air characters are printable ASCII. In the same way as base 10 encompasses the number range 0-9, base 91 encompasses the number range 0-90. If you then add 33 to any base 91 value, you get an ASCII character in the range 33 ("!") to 123 ("{" ). This stops just short of "|", which may upset a TNC.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
+-----+
```

---

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### 35. [aprsspec] FUTURE: APRS-WG open mind? (was re: Base 91)

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 10 Dec 1999 16:27:45 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>,  
Koellner Guenter <Guenter.Koellner@icn.siemens.de>  
Message-ID: <LYR11589-54488-1999.12.10-15.46.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
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NOTE:

This message \*only\* covers future extensions to APRS. I am not criticizing the fine editorial work done on the PDF APRS draft 1.0 or its stated intent. (well, I have a few minor issues, but I'll save those for another day)

I'm writing this because I am concerned that good ideas are being dismissed offhand, or in some cases, apparently not even being considered by the WG. I feel this is wrong and goes against the amateur goal of technical achievement.

Steve Dimse wrote:

> On 12/10/99 4:34 AM Paul Keinanen (keinanen@sci.fi) wrote:  
>  
>  
> >IMHO, it is a scandalous that the packet network is not 8 bit  
> >transparent in 1999. Designing all new protocols in this limitation in  
> >mind, will result that there is no motivation for updating equipment  
> >to be 8 bit clean. If some popular application will require 8 bit  
> >transparent transfer that will motivate upgrading systems.

> >  
> The trouble is hams are cheap. Many will leave the hobby before they will  
> spend real cash. There are too few hams already, we want to do everything  
> we can to encourage people to use APRS. APRS is designed to be used with  
> older equipment, because many hams have old TNCs laying around their  
> house, they can dust them off and get on the air.  
>  
> So be scandalized, but maintaining compatibility with as much equipment  
> and software as possible is a guiding principle of APRS.

We need to make something clear here. IT IS THE WORKING GROUP's GUIDING PRINCIPLE. I don't think all U.S. hams that use APRS/AAVL technology should take a bum rap for this. European packet radio technology, for the most part, is now far ahead of U.S. technology. The fact that we are getting these types of comments from non-U.S. hams (bit efficiency, SI units, Wwconvers nodes, etc.) shows there is a WIDE WORLD out there that \_knows\_ the issues. The WG would be well advised to consider some of these things. These people know what they are talking about.

And by the way, the majority of hams are \*not\* cheap. Penny wise, and pound foolish, maybe.... In any case, a USED MFJ-1270 can pass 8bit data, so if someone can't afford a \$75US TNC hooked to a \$1500 computer feeding a \$300 radio, powered by their \$100 power supply, feeding \$50 of coax to a \$200 antenna, with a \$80+ APRS program, I just can't believe these "hams are cheap", they are simply foolish. The "foolish ham" might be outspoken, but clearly they are not the majority, and as such, fools shouldn't be allowed to cripple the progress of APRS/AAVL.

And oh, BTW, both WIN-APRS and UI-View support AGWPE, which lowers the cost of a 8 bit transparent TNC under \$50, or -0- if you already have a sound card in your computer. Lets not base the future of APRS on some unsound/flawed economic assumptions.

If you design for the lowest common denominator, which apparently the WG is, then that is EXACTLY what you will get. At the very least, I would ask the WG to hold the door open for these types of things in version 2. But instead, in another message, we are seeing a member of the WG telling us how they are going to vote (NO) on things that haven't even been brought up officially for version 2.0 of the draft (the SI issue). This is what is scandalous.

We were originally told by TAPR that an open APRS protocol SIG-LIST would be created for these very technical/protocol issues. Then this got changed to "APRS-SPEC", which is apparently intended only for minor/typo corrections to the draft. And now it has been learned that there is indeed an active APRS protocol list, except it is a WG members only private list not open for public participation or even observation!!

Since we are talking about the future of APRS/AAVL, and the WG is a closed organization, I feel the WG owes the entire amateur community an open mind, and to be receptive to new ideas/technologies.

Comments anyone?

Sincerely

-Jeff wb8wka

P.S. Please read NOTE at head of message.

---

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### 36. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Guy Story <kc5goi@tapr.org>  
Date: Fri, 10 Dec 1999 15:42:57 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54492-1999.12.10-15.57.42--lyris.aprsspec#tapr.org@lists.tapr.org>  
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I agree with Steve's standpoint on old gear. When I do a presentation to a club or group I always address first that APRS can be run on a tnc that may go back to the early days of tnc-2. I have received email from hams

that are very cheap but already have a tnc an radio that has not been touched in years. While being cheap can be a hinderance you can use it to your advantage. While packet is not a new technology, what we are applying to is relatively new and can get some "old timers" back in the art. I have reviewed parts of the spec and find that it is a good document and I offer my thanks to everyone on the committee. Good work guys.

Guy Story  
KC5G0I  
kc5goi@tapr.org  
<http://www.kc5goi.net>

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### 37. [aprsspec] Re: FUTURE: APRS-WG open mind? (was re: Base 91)

From: John Ackermann <[jra@febo.com](mailto:jra@febo.com)>  
Date: Fri, 10 Dec 1999 17:21:34 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, Koellner Guenter <[Guenter.Koellner@icn.siemens.de](mailto:Guenter.Koellner@icn.siemens.de)>, [jra@meow.febo.com](mailto:jra@meow.febo.com)  
Message-ID: <[LYR11589-54498-1999.12.10-16.36.27--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54498-1999.12.10-16.36.27--lyris.aprsspec#tapr.org@lists.tapr.org)>  
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In message <[LYR11592-54488-1999.12.10-15.46.58--n8ur#tapr.org@lists.tapr.org](mailto:LYR11592-54488-1999.12.10-15.46.58--n8ur#tapr.org@lists.tapr.org)>, Jeff King writes:

>We were originally told by TAPR that an open APRS protocol SIG-LIST  
>would be created for these very technical/protocol issues. Then this  
>got changed to "APRS-SPEC", which is apparently intended only for  
>minor/typo corrections to the draft. And now it has been learned that  
>there is indeed an active APRS protocol list, except it is a WG members only  
>private list not open for public participation or even observation!!

I'm not going to reply to Jeff's other comments (lack of time right now, and perhaps knowledge as well), but this statement is flat out wrong and needs to be corrected.

The APRS-SPEC mailing list is indeed intended for public discussion of APRS protocol issues. It is being used right now as the preferred way to post issues about the specification document that is on the table -- and I think most of the WG members would prefer that we focus on that document rather than addressing new issues -- but we have never said that broader discussions of the protocol are not appropriate for here.

John N8UR  
[jra@febo.com](mailto:jra@febo.com)

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---

### 38. [aprsspec] Re: FUTURE: APRS-WG open mind? (was re: Base 91)

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Fri, 10 Dec 1999 17:44:36 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, Koellner Guenter <[Guenter.Koellner@icn.siemens.de](mailto:Guenter.Koellner@icn.siemens.de)>  
Message-ID: <[LYR11589-54503-1999.12.10-17.04.08--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54503-1999.12.10-17.04.08--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hi John:

John Ackermann wrote:

> In message <[LYR11592-54488-1999.12.10-15.46.58--n8ur#tapr.org@lists.tapr.org](mailto:LYR11592-54488-1999.12.10-15.46.58--n8ur#tapr.org@lists.tapr.org)>,  
> Jeff King writes:  
>  
> >We were originally told by TAPR that an open APRS protocol SIG-LIST  
> >would be created for these very technical/protocol issues. Then this  
> >got changed to "APRS-SPEC", which is apparently intended only for  
> >minor/typo corrections to the draft. And now it has been learned that  
> >there is indeed an active APRS protocol list, except it is a WG members only  
> >private list not open for public participation or even observation!!  
>

> I'm not going to reply to Jeff's other comments (lack of time right now,  
> and perhaps knowledge as well), but this statement is flat out wrong and  
> needs to be corrected.  
>  
> The APRS-SPEC mailing list is indeed intended for public discussion of  
> APRS protocol issues. It is being used right now as the preferred way  
> to post issues about the specification document that is on the table --  
> and I think most of the WG members would prefer that we focus on that  
> document rather than addressing new issues -- but we have never said that  
> broader discussions of the protocol are not appropriate for here.

As I know your a wordsmith, I need to ask what you mean by  
"ARPS protocol issues"? I of course was refering to the broader  
issues of APRS/.AAVL and how best to implement it. This was my  
laymans approach to it. For the sake of discussion, I will concede  
this.

I therefore stand corrected. My confusion was both the name  
"APRS-SPEC", the fact that so many were dismissed out of hand  
as well as the fact that protocol issues were being  
discussed on the private list. This all lead me to the conclusion that  
APRS-SPEC was just that..... for typo corrections of the APRS-SPEC.  
But, I am wrong as you pointed out and stand corrected.

However, this was a secondary point to my posting. I still think the WG  
as a whole needs to endeavor to keep an open mind. I hope you will  
continue to encourage them as I know you have in the past.

73

-Jeff

---

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---

### 39. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 10 Dec 1999 18:08:17 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54506-1999.12.10-17.20.45--lyris.aprsspec#tapr.org@lists.tapr.org>  
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Future, Outside of scope of APRS version 1.0

Guy:

All kudos and backslapping aside, did you ever consider the fact that  
the effort to cater to the "old timers covered with dust" might be a  
determent to the future growth of the hobby? I mean, if I wanted  
to enter a hobby, I'd want it to be fresh, exciting and technologically  
advanced. I just can't see all the effort, and ultimate result being to  
cripple the growth of APRS.

And this whole hog-wash about 7 bit stuff is just that..... hog-wash.  
8 bit codes can be run on a 1984 TNC1, let alone on any newer dusty  
TNC2. Its always been an artificial issue and some people just don't  
want to let it go.

I've been down the same road you have.... except it was for Spread  
Spectrum presentations. I of course was involved in the TAPR SS-STA  
and made many presentations at ham clubs on spread spectrum. As I  
said before on the SS-list, for the most part the audience's eyes would  
glaze over. Sure, a few would get it, but most not. As best, they would  
see it as just another mode. It was a struggle to get one or two seriously  
interested.

Now, I did do a few presentations at Linux and computer (non-ham)  
clubs. What a \*refreshing\* difference. These guys saw the light and  
could understand the new paradigm that spread spectrum could be.  
And in fact, almost everyone that we had in our SS group was from this  
Ann Arbor Linux group. Yes, a number were already hams, but they were  
geeks first, hams second.

I don't think we should be targeting APRS towards "old timers" (meaning  
technological inferiority) in particular if one of the stated goals of APRS is to  
increase the number of U.S. amateur licenses. Its needs to be targeted

at people that don't have licenses, that may want to get one in the future. In effect, I'm saying APRS could be a "killer app". Lets just not lobotomize it for the sake of a few dusty hams that can't spring up \$5 for a new ROM for there TNC.

Hey, maybe TAPR still has some money left in the QSY fund? We can call it the ROM fund? What cha' think?

Regards,

Jeff King wb8wka

Guy Story wrote:

> I agree with Steve's standpoint on old gear. When I do a presentation to  
> a club or group I always address first that APRS can be run on a tnc that  
> may go back to the early days of tnc-2. I have received email from hams  
> that are very cheap but already have a tnc an radio that has not been  
> touched in years. While being cheap can be a hinderance you can use it to  
> your advantage. While packet is not a new technology, what we are appling  
> to is is realativly new and can get some "old timers" back in the art. I  
> have reviewed parts of the spec and find that it is a good document and I  
> offer my thanks to everyone on the comittee. Good work guys.  
>  
> Guy Story  
> KC5G0I  
> kc5goi@tapr.org  
> http://www.kc5goi.net  
>  
> ---  
> You are currently subscribed to aprsspec as: jeff@aerodata.net  
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

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---

#### 40. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 10 Dec 1999 19:01:48 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54509-1999.12.10-18.16.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

One thing I hoped for in the opening up of APRS was for some of the talent coming on board to help us with better routing. I have always said that the GENERIC DIGIPEATING, was only a termprary way to get APRS to work with existing TNC's, but that a level 3/4 routing or even my simple SSID routing would vastly improve APRS... (Here the TO-CALL SSID is the "hop" indicator; and thus a free byte). We are currently wasting from 7 to 35 bytes in every single packet!

If some of the talent that wants to re-invent APRS were applied to improving the routing, then I think the results would be very productive indeed. All it takes is someone to write EPROM code for the popular TNC's and boy would it sweep through APRSdom...

Bob

---

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---

#### 41. [aprsspec] Omission: PIC-E in glossary

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 10 Dec 1999 19:08:54 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54510-1999.12.10-18.21.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

MIM and MIC-E are in the glossary but I don't see PIC-E. Might want to include this (as it is mentioned in the text of the document).

-Jeff

---

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---

## 42. [aprsspec] Future of APRS WG

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Fri, 10 Dec 1999 19:12:51 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: jeff@aerodata.net  
Message-ID: <LYR11589-54512-1999.12.10-18.28.48--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>

>I'm writing this because I am concerned that good ideas are  
>being dismissed offhand, or in some cases, apparently not even  
>being considered by the WG. I feel this is wrong and goes  
>against the amateur goal of technical achievement.  
>

I am VERY open to new ideas, always have been.. At the moment, I want to get some stuff finished in the CURRENT versions of WinAPRS/MacAPRS/X-APRS.. This are NOT protocol issues, but DISPLAY issues.. There are some things we don't display correctly.. And others we want to improve upon..

Also, I want a chance to make 110% sure, that our software FULLY complies to the new standard.. I also want a chance to breath and enjoy the holidays with family and friends..

I am all for new improvements etc, But, give us a little breathing room after busting our backs for 9 months..

Keith Sproul

|                                     |                     |
|-------------------------------------|---------------------|
| Keith Sproul                        | 732 445-3695 Office |
| Student Housing Network Coordinator | 732 445-2968 Fax    |
| mailto:ksproul@rci.rutgers.edu      | 732 821-4828 Home   |
| http://dorm.rutgers.edu/~ksproul/   | WU2Z                |

---

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---

## 43. [aprsspec] INCONSISTENCY/UNCLEAR: Authors foreword, Page 4

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 10 Dec 1999 19:42:51 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54516-1999.12.10-18.55.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The author's foreword states in the first paragraph, page 4:

"This reference document describes what is known as APRS protocol Version 1.0, and is essentially a description of how APRS operates today"

This statement is consistent of what I have seen on the SIG.... that is, all those wanting to add enhancements were deferred to the next version.

Now in paragraph 4, page 4 again, it states:

"It is important to realize how APRS originated, and to understand the design philosophy behind it."

Right, its always good to know how things originated in the past. But then the document goes on to say.:

"In particular, we feel strongly that APRS is, and should remain a light-weight tactical system -- almost anyone should be able to use it in temporary situations (such as emergencies or mobile work or weather watching) with the minimum of training and equipment"

Now, not to be picky, is this part of the spec? If so, it goes beyond

"documenting what we have" and sets a precedent for any further development. I think it would be best to delete any future development rules and focus on just the protocol itself for now. Save that for version 2.0

If we leave it, the statement should be re-written to say: "APRS is currently a light-weight tactical system" \*without\* going into any doctrine on how future enhancements should be made.

If we need to define future development now, then this statement needs clarification. That is, what exactly does "light weight tactical system" mean? That anyone should be able to use it? Then we need some parameters on who this "anyone" is, so that software can pass the APRS certification. The way I see it, "light-weight" will evolve over time as the software becomes smarter. If this is understood by the APRS-WG, then I have no problem with the statement as it stands.

Sorry to be anal about this, but I have some ideas for enhancements and want to make sure nothing said in this document will rule them out from future consideration.

-Jeff

If the f

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---

#### 44. [aprsspec] SUGGESTION: Mr. Spock and the RFC's

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 10 Dec 1999 19:58:33 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54518-1999.12.10-19.11.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

This is minor, but might save some embarrassment when the document is published.

Page 4, paragraph 3 reads:

"It is not intended, however, to be a dry-as-dust, pedantic, RFC-style programming specification, to be read and understood only by the Mr Spocks of this world"

Does this add anything to the document? All it tells me is whoever wrote it has read very few RFC's. FYI, \*anyone\* can write an RFC and stand a good chance of getting it published. And I've seen RFC's that look like they have been written for the "Dear Abby" audience as well as the so called "Mr. Spock" audience.

I'd just delete this section and just say your trying to write a clear document and leave it at that. Taking a swing at those that write RFC's or are fans of "Mr. Spock" is just not required.

BTW, the APRS-WG really should consider submitting the APRS spec to the RFC process. I'm not kidding, at least on the internet side. We hams that do TCP/IP over the air have done so, I see no reason why the APRS hams should not do so.

Its there for a reason and it works (most of the time).

-Jeff

---

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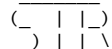
#### 45. [aprsspec] Re: SUGGESTION: Mr. Spock and the RFC's

From: "Shawn T. Rutledge" <rutledge@cx47646-a.phnx1.az.home.com>  
Date: Fri, 10 Dec 1999 18:57:52 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54523-1999.12.10-20.12.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, Dec 10, 1999 at 07:58:33PM -0500, Jeff King wrote:  
> This is minor, but might save some embarrassment when the  
> document is published.  
>  
> Page 4, paragraph 3 reads:  
>  
> "It is not intended, however, to be a dry-as-dust, pedantic, RFC-style  
> programming specification, to be read and understood only by the  
> Mr Spocks of this world"  
>  
> Does this add anything to the document? All it tells me is whoever wrote  
> it has read very few RFC's. FYI, \*anyone\* can write an RFC and stand  
> a good chance of getting it published. And I've seen RFC's that look  
> like they have been written for the "Dear Abby" audience as well  
> as the so called "Mr. Spock" audience.  
>  
> I'd just delete this section and just say your trying to write a clear  
> document and leave it at that. Taking a swing at those that  
> write RFC's or are fans of "Mr. Spock" is just not required.  
>  
> BTW, the APRS-WG really should consider submitting the APRS  
> spec to the RFC process. I'm not kidding, at least on the internet  
> side. We hams that do TCP/IP over the air have done so, I see no  
> reason why the APRS hams should not do so.  
>  
> Its there for a reason and it works (most of the time).

I second all the above. Good points.

--

 ecloud@bigfoot.com    <http://www.bigfoot.com/~ecloud>  
finger rutledge@cx47646-a.phnx1.az.home.com

---

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#### 46. [aprsspec] Re: SUGGESTION: Mr. Spock and the RFC's

From: Paul Keinanen <keinanen@sci.fi>  
Date: Sat, 11 Dec 1999 16:43:15 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54602-1999.12.11-08.55.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 10 Dec 1999 19:58:33 -0500, Jeff King <jeff@aerodata.net>  
wrote:  
  
>This is minor, but might save some embarrassment when the  
>document is published.  
>  
>Page 4, paragraph 3 reads:  
>  
> "It is not intended, however, to be a dry-as-dust, pedantic, RFC-style  
> programming specification, to be read and understood only by the  
> Mr Spocks of this world"  
>  
>Does this add anything to the document? All it tells me is whoever wrote  
>it has read very few RFC's. FYI, \*anyone\* can write an RFC and stand  
>a good chance of getting it published. And I've seen RFC's that look  
>like they have been written for the "Dear Abby" audience as well  
>as the so called "Mr. Spock" audience.  
>  
>I'd just delete this section and just say your trying to write a clear  
>document and leave it at that. Taking a swing at those that  
>write RFC's or are fans of "Mr. Spock" is just not required.

I was also amused reading this paragraph. If you want to impress



someone, at least refer to ITU-R/ITU-T (previously CCIR/CCITT) documents in which you really had to play Devil's Advocate in order to avoid all the pitfalls in the documentation :-).

A document like the APRS 1.0 specification should be easily readable (which it is) and should also include warnings of typical programming pitfalls (e.g. not using the exact conversion coefficients in unit conversion or the problem with upper case/lower case in locators).

Paul OH3LWR

---

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#### 47. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Sat, 11 Dec 1999 16:43:19 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54603-1999.12.11-08.56.10--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54603-1999.12.11-08.56.10--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 10 Dec 1999 09:29:07 -0500, Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)> wrote:

>On 12/10/99 4:34 AM Paul Keinanen ([keinanen@sci.fi](mailto:keinanen@sci.fi)) wrote:

>

>>So, base-91 is not currently a widely implemented feature.

>>

>No, but it has been implemented in the new Kenwood D700, which makes it  
>"cast in stone" as far as we are concerned.

Documenting what some hardware manufacturer has done is a good thing,  
but endorsing something (by \_not\_ telling that this is something  
vendor specific) is quite questionable.

>The trouble is hams are cheap. Many will leave the hobby before they will  
>spend real cash. There are too few hams already, we want to do everything  
>we can to encourage people to use APRS. APRS is designed to be used with  
>older equipment, because many hams have old TNCs laying around their  
>house, they can dust them off and get on the air.

As I said in the original message, there are human readable formats  
available, so if anyone wants to broadcast a message, this can be done  
using the existing formats. However, if someone wants to transmit the  
data in only machine readable compressed form, in order to minimise  
the message length, why not simply use binary representation.

Paul OH3LWR

---

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#### 48. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Sat, 11 Dec 1999 16:43:22 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54604-1999.12.11-08.56.16--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54604-1999.12.11-08.56.16--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 10 Dec 1999 19:32:03 +0000, Ian Wade  
<[ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)> wrote:

>In article <[LYR11659-54419-1999.12.10-03.46.53--ian#dowrmain.demon.co.uk](mailto:LYR11659-54419-1999.12.10-03.46.53--ian#dowrmain.demon.co.uk)  
>@lists.tapr.org>, Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)> writes

>

>>I did not find a motivation in the document why such an obscure  
>>encoding was invented, so could some please explain the motivation  
>>behind it.

>

>Base 91 is a neat trick to ensure that on-air characters are printable  
>ASCII. In the same way as base 10 encompasses the number range 0-9, base  
>91 encompasses the number range 0-90. If you then add 33 to any base 91  
>value, you get an ASCII character in the range 33 ("!") to 123 ("").  
>This stops just short of "|", which may upset a TNC.

Ian,

Thanks for the explanation, the situation is as bad as I have feared:-(.

If this vendor specific format is really going to be endorsed by including it into the APRS 1.0 specification, then this clarification is really needed in the specification, since amateur radio seems to be the only place where people still struggle with 7 bit characters.

Paul OH3LWR

---

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## 49. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Steve Dimse <k4hg@tapr.org>  
Date: Sat, 11 Dec 1999 11:41:42 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54614-1999.12.11-11.01.21--lyris.aprsspec#tapr.org@lists.tapr.org>  
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On 12/11/99 9:43 AM Paul Keinanen (keinanen@sci.fi) wrote:

>On Fri, 10 Dec 1999 09:29:07 -0500, Steve Dimse <k4hg@tapr.org> wrote:  
>  
>>On 12/10/99 4:34 AM Paul Keinanen (keinanen@sci.fi) wrote:  
>>  
>>>So, base-91 is not currently a widely implemented feature.  
>>>  
>>No, but it has been implemented in the new Kenwood D700, which makes it  
>>"cast in stone" as far as we are concerned.  
>  
>Documenting what some hardware manufacturer has done is a good thing,  
>but endorsing something (by \_not\_ telling that this is something  
>vendor specific) is quite questionable.  
>  
You have this wrong. This isn't something vendor specific that Kenwood came up with. It was a format developed by and agreed to the authors. It was then given to Kenwood along with the rest of the APRS formats, and they implemented it in the new radio.

The thing is that once these protocols are implemented in a hardware device they become set in stone, or more accurately silicon! Yes, ROMS can be replaced, EEPROMS reprogrammed, but it becomes quite a task and not one undertaken lightly...

Steve K4HG

---

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## 50. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: steve.sampson@hushmail.com  
Date: Sat, 11 Dec 1999 12:21:22 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54617-1999.12.11-11.43.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I for one see your point about 7 bit characters. There's no need to beat it to death. Just document it, and press on.

Suffice to say that a future protocol will have to use Unicode as a minimum.

>If this vendor specific format is really going to be endorsed by  
>including it into the APRS 1.0 specification, then this clarification  
>is really needed in the specification, since amateur radio seems to  
>be the only place where people still struggle with 7 bit characters.

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## 51. [aprsspec] Comment Period

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sat, 11 Dec 1999 11:07:40 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-54621-1999.12.11-12.22.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I would sincerely request that the comment period be extended by a few days, at least. I see no reason to rush it, and I am barely past the description of the destination field!!

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
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A computer without Windows is like a cake without mustard. - anonymous

---

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## 52. [aprsspec] Net names

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sat, 11 Dec 1999 11:10:42 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-54624-1999.12.11-12.25.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On page 19, the set of APRS-recognized destination "callsigns" (term used under duress) includes "RTCM" and "TLM". What are they used for?

The earlier recognized set included "SKYWARN". This seemed very useful. Is this now supposed to fall under "SKY"??

Many thanks,

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
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A computer without Windows is like a cake without mustard. - anonymous

---

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## 53. [aprsspec] Re-Inventing APRS Routing

From: [archer@eskimo.com](mailto:archer@eskimo.com)  
Date: Sat, 11 Dec 1999 10:32:18 -0800 (PST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "Mills, Curt, WE7U" <[BowHunter@mail.com](mailto:BowHunter@mail.com)>  
Message-ID: <LYR11589-54626-1999.12.11-12.47.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 10 Dec 1999, Bob Bruninga wrote:

> If some of the talent that wants to re-invent APRS were applied to  
> improving the routing, then I think the results would be very  
> productive indeed. All it takes is someone to write EPROM code for the  
> popular TNC's and boy would it sweep through APRSdom....

Well, if anyone wants a full-blown GCC compiler for the HC11 processor that is in the KPC3+, go to my home page below and download the tweaks to gcc-2.8.1. There's also a link there to mods for the gcc-2.9.5

compiler that a guy in France did. The gcc-2.9.5 stuff uses the full GNU toolset, including the GAS assembler and the GNU linker. All of this stuff is also searchable on "http://freshmeat.net".

That ought'a get someone started. Works great on Linux compiling things for the HC11.

Curt, WE7U. BowHunter@mail.com

http://www.eskimo.com/~archer

Lotto: A tax on people who are bad at math. - unknown

Windows: Microsoft's tax on computer illiterates. - WE7U.

---

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## 54. [aprsspec] Re: Net names

From: Ian Wade <ian@dowrmain.demon.co.uk>

Date: Sat, 11 Dec 1999 20:44:42 +0000

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-54632-1999.12.11-15.00.19--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

In article <LYR11659-54624-1999.12.11-12.25.30--ian#dowrmain.demon.co.uk

@lists.tapr.org>, Jim Wagner <wagnerj@proaxis.com> writes

>On page 19, the set of APRS-recognized destination "callsigns" (term used  
>under duress) includes "RTCM"

RTCM is used for Differential GPS.

> and "TLM".

Telemetry (I think).

>

>The earlier recognized set included "SKYWARN". This seemed very useful. Is  
>this now supposed to fall under "SKY\*"??

"SKY" and anything beginning with "SKY" falls under "SKY\*".

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|               email: g3nrw@arrrl.net                  |
|               |                                         |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

---

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## 55. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Tim Salo <salo@networkcs.com>

Date: Sat, 11 Dec 1999 18:28:51 -0600 (CST)

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-54673-1999.12.11-18.43.43--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

> Date: Fri, 10 Dec 1999 18:08:17 -0500

> From: Jeff King <jeff@aerodata.net>

> Subject: Re: [aprsspec] Base-91 (was Destination Field - Grid Square)

> [...]

> And this whole hog-wash about 7 bit stuff is just that.... hog-wash.

> 8 bit codes can be run on a 1984 TNC1, let alone on any newer dusty

> TNC2. Its always been an artificial issue and some people just don't

> want to let it go.

> [...]

I would be very interested in knowing which TNCs are not 8-bit clean and how many of them were manufactured.

My impression was that only a fairly small number of TNCs fell in this category, but I don't believe anyone has actually identified any by model.

There is a point at which the number of TNCs in this category is so small that they ought not be permitted to inhibit the evolution of amateur packet protocols.

By the way, is the rest of the APRS system 8-bit clean? I was under the impression that some APRS software couldn't handle 8-bit characters.

-tjs

---

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## 56. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)>  
Date: Sat, 11 Dec 1999 21:23:08 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54683-1999.12.11-20.38.10--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54683-1999.12.11-20.38.10--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 12/11/99 7:28 PM Tim Salo ([salo@networkcs.com](mailto:salo@networkcs.com)) wrote:

>I would be very interested in knowing which TNCs are not 8-bit clean and  
>how many of them were manufactured.

>

>My impression was that only a fairly small number of TNCs fell in  
>this category, but I don't believe anyone has actually identified any  
>by model.

>

The nomenclature 8-bit is a little misleading, the primary problem is in getting all the values from 0 to 127. ALL TNCs, when used in unproto mode, will not accept all 7 bit codes without gymnastics. The most obvious example is ctrl-c. Sending this to a TNC will put it into command mode, not add a 03 to the data stream. Add the stream switch characters, and you end up with 91 contiguous characters. This is the primary limitation facing the use of TNCs with wider character ranges.

There is an escape character, generally ctrl-v, that allows you to enter this and other restricted characters into data strings, but this adds an extra step into the process. Another answer would be to use KISS mode. My suspicion is that either of these two work-arounds would also work for 8 bit numbers, but I have no direct experience.

>There is a point at which the number of TNCs in this category is so  
>small that they ought not be permitted to inhibit the evolution of  
>amateur packet protocols.

>

>By the way, is the rest of the APRS system 8-bit clean? I was under  
>the impression that some APRS software couldn't handle 8-bit characters.

>

The internet portion does not pass non-printing characters, as became clear when the Mic-E was developed. I spent a lot of time trying to track down the origin of the problem, I think it is in the use of the telnet libraries by the clients. If I connect directly to APRServe and send non-printing characters, and watch the outgoing data in a sniffer program, they are all present. However, javAPRS, which uses the Java socket library, seems to filter them out. There is no published interface to control the filtering. When I was working on the problem I couldn't find a good reference to the internal workings of the socket and stream classes, and in any case the other clients were having the same problem, so after spending far too much time on it I moved on.

I know this is going to raise the hackles of those people screaming kludge. However I am a pragmatist. If I can't solve a problem in a reasonable amount of time, I go around it. For me, the joy comes in making something work...

So please, no whining, or demands I fix it. At any time I'll gladly refund all the money any of you have paid me for the use of the APRServe network. If this limitation of APRServe bugs you, don't waste my time and everyone elses complaining about it, work on your own to define the problem and solve it. As I said, I wasted far too much time on this already, and I have things I find far more interesting to work on now.

Frankly, I'd be thrilled if someone would take over the entire APRServe

network, it takes at least half of my free time monitoring and maintaining it now. In 2.5 years, I've gotten fewer than a hundred thank-you's, not much return for my investment of thousands of hours and thousands of dollars.

Steve K4HG

---

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---

## 57. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Sat, 11 Dec 1999 21:05:17 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54724-1999.12.11-23.37.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I have been experimenting with KISS and 8-bit. It appears to be no problem transmitting and receiving 8-bit. However, not all the digis in my area appear to want to digi it. Some do! It appears you can put anything in the data portion of the packet. The KISS protocol handles the control codes and binary transparently. Using 8-bit binary allows for putting more data in the same space we now use. Using Base91, gives us 6.5 bits precision. Not bad. But we could gain using the extra 1.5 bits. Example: 8 bytes, one can have Lat/Long to a couple of inches. Indeed, Garmin GPS receivers use 8 bytes to describe Lat/Long in the Garmin protocol using 2, 4-byte integers. And DeLorme encodes Lat/Long in 8 bytes also.

APRServe: First, Steve, THANK YOU, THANK YOU, THANK YOU. It is the glue that ties vastly separated areas together. It has made APRS a global community. Second: I have not understood the problem with 7 vs 8 bits with APRServe before. There is a simple way to get around this issue. Take the Mic-E example. Instead of having each client program convert the Mic-E to a "standard" APRS packet, it could just be encoded in something simple like Base64. The packet could be constructed to be transparent to APRServe. something like this:  
APRSSA>BASE64:base\_64\_encoded\_data\_goes\_here.

The From callsign shows the originating station. The To callsign says the data in Base64. And the "base\_64\_encoded\_data" is the complete original packet, header/address/data complete. The client would just reverse the Base64, and send the data back through the parser. Only packets that need encoding would be encoded. Mic-E and Binary.

Brent KH2Z

----- Original Message -----

From: Steve Dimse <k4hg@tapr.org>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Sent: Saturday, December 11, 1999 6:23 PM  
Subject: [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

> On 12/11/99 7:28 PM Tim Salo (salo@networkcs.com) wrote:  
>  
> >I would be very interested in knowing which TNCs are not 8-bit clean and  
> >how many of them were manufactured.  
> >  
> >My impression was that only a fairly small number of TNCs fell in  
> >this category, but I don't believe anyone has actually identified any  
> >by model.  
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> >The nomenclature 8-bit is a little misleading, the primary problem is in  
> >getting all the values from 0 to 127. ALL TNCs, when used in unproto  
> >mode, will not accept all 7 bit codes without gymnastics. The most  
> >obvious example is ctrl-c. Sending this to a TNC will put it into command  
> >mode, not add a 03 to the data stream. Add the stream switch characters,  
> >and you end up with 91 contiguous characters. This is the primary  
> >limitation facing the use of TNCs with wider character ranges.  
> >  
> >There is an escape character, generally ctl-v, that allows you to enter  
> >this and other restricted characters into data strings, but this adds an  
> >extra step into the process. Another answer would be to use KISS mode. My  
> >suspicion is that either of these two work-arounds would also work for 8  
> >bit numbers, but I have no direct experience.

>  
> >There is a point at which the number of TNCs in this category is so  
> >small that they ought not be permitted to inhibit the evolution of  
> >amateur packet protocols.  
> >  
> >By the way, is the rest of the APRS system 8-bit clean? I was under  
> >the impression that some APRS software couldn't handle 8-bit characters.  
> >  
> The internet portion does not pass non-printing characters, as became  
> clear when the Mic-E was developed. I spent a lot of time trying to track  
> down the origin of the problem, I think it is in the use of the telnet  
> libraries by the clients. If I connect directly to APRServe and send  
> non-printing characters, and watch the outgoing data in a sniffer  
> program, they are all present. However, javAPRS, which uses the Java  
> socket library, seems to filter them out. There is no published interface  
> to control the filtering. When I was working on the problem I couldn't  
> find a good reference to the internal workings of the socket and stream  
> classes, and in any case the other clients were having the same problem,  
> so after spending far too much time on it I moved on.  
>  
> I know this is going to raise the hackles of those people screaming  
> kludge. However I am a pragmatist. If I can't solve a problem in a  
> reasonable amount of time, I go around it. For me, the joy comes in  
> making something work...  
>  
> So please, no whining, or demands I fix it. At any time I'll gladly  
> refund all the money any of you have paid me for the use of the APRServe  
> network. If this limitation of APRServe bugs you, don't waste my time and  
> everyone elses complaining about it, work on your own to define the  
> problem and solve it. As I said, I wasted far too much time on this  
> already, and I have things I find far more interesting to work on now.  
>  
> Frankly, I'd be thrilled if someone would take over the entire APRServe  
> network, it takes at least half of my free time monitoring and  
> maintaining it now. In 2.5 years, I've gotten fewer than a hundred  
> thank-you's, not much return for my investment of thousands of hours and  
> thousands of dollars.  
>  
> Steve K4HG  
>  
> ---  
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>  
>

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## 58. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 12 Dec 1999 01:12:23 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54738-1999.12.12-00.24.56--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

This message discusses issues outside the scope of draft release 1.0

Steve Dimse wrote:

> On 12/11/99 7:28 PM Tim Salo (salo@networkcs.com) wrote:  
>  
> >I would be very interested in knowing which TNCs are not 8-bit clean and  
> >how many of them were manufactured.  
> >  
> >My impression was that only a fairly small number of TNCs fell in  
> >this category, but I don't believe anyone has actually identified any  
> >by model.  
> >  
> The nomenclature 8-bit is a little misleading, the primary problem is in  
> getting all the values from 0 to 127. ALL TNCs, when used in unproto  
> mode, will not accept all 7 bit codes without gymnastics.

KISS has been out longer then APRS. KISS is available  
on all TNC's. It takes 8 bit chars. It will do UI mode. Numerous  
source code examples exist for KISS, one having just been published  
in the Summer99 PSR. And KISS is much more standard then the

"unproto" mode on the TNC's.

So the claim that "old and dusty" TNC's can't be made to do 8 bit UI frames is false. At worst, a \$5 EPROM would need to be replaced (a 27C64 for the 1984 TNC1).

> >By the way, is the rest of the APRS system 8-bit clean? I was under  
> >the impression that some APRS software couldn't handle 8-bit characters.  
> >  
> The internet portion does not pass non-printing characters, as became  
> clear when the Mic-E was developed.

[... clipped for brevity ...]

So, what you are saying is the tools you had at your disposal for the Macintosh could not be made to pass 8 bit internet data, hence you went with what you had? Fair enough.

> So please, no whining, or demands I fix it.

Now wait one moment here. I don't see anyone asking you to do that or whining about it. What I see is people expressing concern that APRS will be limited to a 7 bit over the air format. The fact that the Mac tools may or may not have been responsible for this (legacy software) really is not the issue. We need to look forward with open minds. The very \*last\* thing we want to do is constrain and cripple our over the air format, were we need the most efficiency possible. This of course means a full 8bit compressed format.

>If this limitation of APRServe bugs you, don't waste my time and  
>everyone elses complaining about it, work on your own to define the  
>problem and solve it.

I don't understand this statement. We are on the APRSSPEC list discussing future extensions to APRS. Are you suggesting that everyone go out on their own and develop independent non compliant versions of "APRS"? This would seem counterproductive to the goals of the APRS-WG.

> Frankly, I'd be thrilled if someone would take over the entire APRServe  
> network, it takes at least half of my free time monitoring and  
> maintaining it now. In 2.5 years, I've gotten fewer than a hundred  
> thank-you's, not much return for my investment of thousands of hours and  
> thousands of dollars.

If your not getting anything out of it, by all means, I'd pass it on. But I think you underestimate the amount of gratitude people have for what you have contributed to APRS. While I can't speak of the "thanks-you's" I can quote the numbers from the Spring 1999 PSR. You ran for the first time for the TAPR BOD in 1999 and captured 78.85% of the memberships vote. This was second only to Steve Bible, a long time incumbent BOD member. Assuming you wanted to be on the TAPR board, one could take overwhelming victory as a thank you. I think you should.

In any case, my interest here is that the APRS-WG consider new ideas and not hobble APRS v2.0 with any personal bias or past flawed practices. Lets keep a open mind to others ideas. And lets not assume just because that is how we always have done it is the way we should always do it.

73

-Jeff

---

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## 59. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Sun, 12 Dec 1999 09:26:43 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54751-1999.12.12-03.54.13--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain



In article <LYR11659-54683-1999.12.11-20.38.10--ian@dowrmain.demon.co.uk@lists.tapr.org>, Steve Dimse <k4hg@tapr.org> writes

>The nomenclature 8-bit is a little misleading, the primary problem is in  
>getting all the values from 0 to 127. ALL TNCs, when used in unproto  
>mode, will not accept all 7 bit codes without gymnastics. The most  
>obvious example is ctrl-c. Sending this to a TNC will put it into command  
>mode, not add a 03 to the data stream. Add the stream switch characters,  
>and you end up with 91 contiguous characters. This is the primary  
>limitation facing the use of TNCs with wider character ranges.  
>  
>There is an escape character, generally ctl-v, that allows you to enter  
>this and other restricted characters into data strings, but this adds an  
>extra step into the process.

Yes, all of that is true. But this is how we used to do things fifteen (15) years ago! Almost since the dawn of AX.25 packet radio (1984) we've also had KISS mode, which removes \*all\* the kludges you mention. KA9Q TCP/IP has been running since the late 80s over AX.25 without any of these hangups. I just cannot understand why in 1999 so many people \*still\* have a fixation that 7-bit ASCII terminal mode is the only way to talk to a TNC. (Or even why they even need a TNC any more).

>The internet portion does not pass non-printing characters, as became  
>clear when the Mic-E was developed.

It depends on how you pass them. The Internet has been passing 8-bit mail and news for years. Yes, you may need to convert binary to 7-bit characters, but there are dozens of ways of doing this reliably -- you don't have to invent anything new. Yes, there are limitations in telnet clients, but telnet isn't the only way to talk to the Internet.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 60. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Sun, 12 Dec 1999 09:31:54 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54752-1999.12.12-03.54.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
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In article <LYR11659-54738-1999.12.12-00.24.56--ian@dowrmain.demon.co.uk@lists.tapr.org>, Jeff King <jeff@aerodata.net> writes

>  
>In any case, my interest here is that the APRS-WG consider new ideas and  
>not hobble APRS v2.0 with any personal bias or past flawed practices. Lets  
>keep a open mind to others ideas. And lets not assume just because that is  
>how we always have done it is the way we should always do it.  
>

Agreed Jeff. However, the biggest single obstruction to progress is not really personal bias or past flawed practices. It is the Kenwood TH-D7. Its "firm" ware is effectively "rock-solid-concrete" ware (I know, in theory you \*can\* get the firmware changed if you return it to depot, but how many people will actually do that?). Kenwood's commercial decision not to include flash upgradable firmware is incomprehensible.

The D7 has been a two-edged sword. On the one hand, it has ignited APRS by making it attractive to appliance operators. On the other hand, it has become a lead weight around our ankles.

The bottom line is that the APRS protocol is seriously flawed in several areas, and needs to be superceded. For efficiency and flexibility (and

to get away from non-printing ASCII kludges) we probably need to go to KISS/binary, but the TH-D7 can't handle that. So the question is: do we steam ahead with a better protocol and leave the TH-D7 behind, or do we steam ahead with a better protocol on top of the existing protocol, so that TH-D7s can still work? The answer is obvious I think. However, the TH-D7 will be obsolete in a couple of years or so, so we can then progressively phase out today's kludges.

To anyone still thinking of buying a D7, don't waste your money. You'll be stuck with a dinosaur. I don't know about the D700 -- does it support flash upgrade? If not, don't buy that either. The modem vendors learned years ago that the world is changing by the day, and they were forced to support flash upgrades to survive. Kenwood has to do the same. We cannot let a feet-dragging vendor hold back the advancement of APRS.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 61. [aprsspec] Re: APRS 2.0 (non-ascii)

From: steve.sampson@hushmail.com  
Date: Sun, 12 Dec 1999 05:01:40 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54753-1999.12.12-05.49.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>Agreed Jeff. However, the biggest single obstruction to progress is  
>not really personal bias or past flawed practices. It is the Kenwood  
>TH-D7. Its "firm" ware is effectively "rock-solid-concrete" ware (I  
>know, in theory you \*can\* get the firmware changed if you return it  
>to depot, but how many people will actually do that?). Kenwood's  
>commercial decision not to include flash upgradable firmware is  
>incomprehensible.

They don't want Hams to use the radio for their own software development which a flash would allow.

APRS should not be based on what Kenwood implemented. That radio is the typical junk that Hams buy when they have more money than sense. I must have heard 20 people say it does 9600 perfectly with phase modulation, where none have been able to do it before (impossible).

>So the question is: do we steam ahead with a better protocol and leave  
>the TH-D7 behind, or do we steam ahead with a better protocol on top of  
>the existing protocol,

I think a second version of APRS should be specified for higher bit rates. Version 1.0 is adequate for what it is designed for. It has such a low cycle time, that any encoding scheme will have a minor effect.

The APRS 2.0 spec should be binary and not human readable. The cycle time should be on the order of 10 seconds. I picture a 2.4 GHz Spread Spectrum device at 300 ft with 3 Watts, and one of those Proxim Symphony Bridge devices on the roof of your car, using Charles Brains (G4GUO) vocoder board and a laptop... 440 MHz is wide open for the new SS rules. The band is pretty much dead in the midwest except for repeater ID's from those who like to reserve channels, when channels is a dead concept at layer 1. When I click on a storm spotters icon, I want to hear his last voice report. That sort of capability.

In review: APRS V 2.0 should be based on a separate infrastructure that does not include Shift Keying. The TAPR SS project would be a good candidate if it could be shifted down to 440. The 900 MHz target is not usable in most of the midwest at higher power levels.

73,

Steve, K50KC

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---

## 62. [aprsspec] Re: APRS 2.0 (non-ascii)

From: Ian Wade <[ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)>  
Date: Sun, 12 Dec 1999 11:54:54 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54756-1999.12.12-06.12.20--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54756-1999.12.12-06.12.20--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR11659-54753-1999.12.12-05.49.41--ian#dowrmain.demon.co.uk@lists.tapr.org](mailto:LYR11659-54753-1999.12.12-05.49.41--ian#dowrmain.demon.co.uk@lists.tapr.org)>, [steve.sampson@hushmail.com](mailto:steve.sampson@hushmail.com) writes

>

>I think a second version of APRS should be specified for higher bit rates.

Bit rates are a physical layer issue. Nothing to do with the APRS Protocol.

>In review: APRS V 2.0 should be based on a sepearte infrastructure that  
>does not include Shift Keying.

Shift keying is a physical layer issue. Nothing to do with the APRS Protocol.

Nowhere in the spec is there any mention of 1200 bps or any other physical layer issues. Ditto the AX.25 spec.

By all means talk about SS and similar, but this list is not the place for it.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 63. [aprsspec] Re: APRS 2.0 (non-ascii)

From: [steve.sampson@hushmail.com](mailto:steve.sampson@hushmail.com)  
Date: Sun, 12 Dec 1999 06:14:59 -0600 (CST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-54759-1999.12.12-06.49.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54759-1999.12.12-06.49.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

>Bit rates are a physical layer issue. Nothing to do with the APRS  
>Protocol.

The submission was in the context of cycle time. You can't decrease the cycle time without increasing the bit rate.

Will APRS always have a cycle time of 10 minutes? Even in future protocols? What does "...diseminating live data to everyone on a network in real time." really mean? (Page 7).

I will try to refrain from invoking the moderator.

IMPORTANT NOTICE: If you are not using HushMail, this message could have been read easily by the many people who have access to your open personal email messages. Get your FREE, totally secure email address at <http://www.hushmail.com>.

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---

## 64. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Steve Dimse <k4hg@tapr.org>  
Date: Sun, 12 Dec 1999 10:39:40 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54772-1999.12.12-09.56.25--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 12/12/99 1:12 AM Jeff King (jeff@aerodata.net) wrote:

>> The internet portion does not pass non-printing characters, as became  
>> clear when the Mic-E was developed.

>

>[... clipped for brevity ...]

>

>So, what you are saying is the tools you had at your disposal for the  
>Macintosh

>could not be made to pass 8 bit internet data, hence you went with what  
>you had? Fair enough.

>

No, let me clarify what I wrote. I said the Macintosh portion (the  
APRServe program itself) is 8 bit clean. The problem appears to be in the  
clients that connect to it using telnet protocol (RFC 854 provides  
specific functions for specific non-printing chars, so most  
implementations filter them rather than pass them) or other ASCII  
oriented protocol.

On further reflection though, it isn't 8 bit clean...even though it will  
pass all 256 values, 0x0d has special meaning as the end of line  
character. In order to pass it, you would need to go to a different means  
of identifying the end of the packet, such as header-length-data. It  
would be a complete re-write...

>

>> Frankly, I'd be thrilled if someone would take over the entire APRServe  
>> network, it takes at least half of my free time monitoring and  
>> maintaining it now. In 2.5 years, I've gotten fewer than a hundred  
>> thank-you's, not much return for my investment of thousands of hours and  
>> thousands of dollars.

>

>If your not getting anything out of it, by all means, I'd pass it on. But  
>I think

>you underestimate the amount of gratitude people have for what you  
>have contributed to APRS. While I can't speak of the "thanks-you's" I can  
>quote the numbers from the Spring 1999 PSR. You ran for the first time for  
>the TAPR BOD in 1999 and captured 78.85% of the memberships vote.  
>This was second only to Steve Bible, a long time incumbent BOD member.  
>Assuming you wanted to be on the TAPR board, one could take overwhelming  
>victory as a thank you. I think you should.

>

No, I don't underestimate that, and perhaps I wasn't clear in what I  
wrote. I know more than 100 people appreciate my work. My point was that  
my motivation has nothing to do with the tangible rewards of thank-yous  
and money. If it did, I'd have been gone long ago. My motivation is in  
creating something that works and is useful. Unfortunately, it is too  
successful ;-)...it is useful to so many people that I feel an obligation  
to keep it working. So instead of using my free time to work on making  
something new, like XMLserve, work (which is what I want to do), I'm  
spending it keeping something old going (been there, done that).

My real rewards have come and gone...the first time I saw javAPRS bring  
up live data in Atlanta, the first time we sent a message between two  
copies of MacAPRS via the internet, the first time we sent a  
coast-to-coast radio-to-radio message. That is why I did this. I see no  
new firsts coming from APRServe itself, which is why I want to work on  
XMLserve.

>In any case, my interest here is that the APRS-WG consider new ideas and  
>not hobble APRS v2.0 with any personal bias or past flawed practices. Lets  
>keep a open mind to others ideas. And lets not assume just because that is  
>how we always have done it is the way we should always do it.

>

There are problems. Besides the need to change APRServe to handle the  
0x0d character as data, all the IGates would need to be changed as well,  
and all the clients would need to be updated. As Brent pointed out, some

digis don't pass the 8 bit data, that would need to be tracked down and fixed. All this would need to be done more-or-less all at once. Not an insurmountable task, but a daunting one, especially for a loosley-knit volunteer group.

Then there is the issue of the D7's EEPROM. For those that do not know, the D7 EEPROM can only be updated by using a special programmer and soldering wires to the circuit board. If I were designing it I would have done this differently, as I'm sure you would have. However, it exists. Any change to the protocol that affects the D7 means committing every owner to sending these devices to Kenwood for reprogramming. A major inconvenience, and probably expense, since I doubt Kenwood would consider this a warranty repair. As Bob points out, there are more of these already than all registered APRS users. How would you deal with them?

What do you really gain by going to full 8 bits from base-91? A bit and a half, give-or-take, for each byte. The base 91 format encodes the course, speed, altitude, symbol, and lat/lon in 12 characters. So you could save one byte for sure, probably 2. Sure, it would be more elegant, less kludgy, but the savings would be less than 20%, and far less in actual channel capacity when you consider the 30% optimal load and txd time. Is that worth all of this angst?

I think all of us would do things differently if we could throw out everything we have and start from scratch. If APRS were the few dozen people on the list that would be a viable option. With thousands of hams around the world using it, hundreds of digis, and thousands of difficult-to-reprogram radios, I don't feel a new start is a viable option, and I remain committed to making things work as best we can with what we have.

Steve K4HG

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## 65. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)>  
Date: Sun, 12 Dec 1999 10:43:23 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54773-1999.12.12-10.00.06--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54773-1999.12.12-10.00.06--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 12/12/99 4:26 AM Ian Wade ([ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)) wrote:

>>The internet portion does not pass non-printing characters, as became  
>>clear when the Mic-E was developed.  
>  
>It depends on how you pass them. The Internet has been passing 8-bit  
>mail and news for years. Yes, you may need to convert binary to 7-bit  
>characters, but there are dozens of ways of doing this reliably -- you  
>don't have to invent anything new. Yes, there are limitations in telnet  
>clients, but telnet isn't the only way to talk to the Internet.  
>

The specific question was whether the rest of APRS was 8bit ready now. My response addressed the Internet portion of APRS. I am well aware of the internet's handling of 8 bit characters. However, the question what worked now...

Steve K4HG

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---

## 66. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Sun, 12 Dec 1999 08:31:31 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54784-1999.12.12-10.46.26--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54784-1999.12.12-10.46.26--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> On further reflection though, it isn't 8 bit clean...even though it will  
> pass all 256 values, 0x0d has special meaning as the end of line  
> character. In order to pass it, you would need to go to a different means  
> of identifying the end of the packet, such as header-length-data. It  
> would be a complete re-write...

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## 67. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 12 Dec 1999 16:14:44 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54829-1999.12.12-15.27.16--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Dimse wrote:

> On further reflection though, it isn't 8 bit clean...even though it will  
> pass all 256 values, 0x0d has special meaning as the end of line  
> character. In order to pass it, you would need to go to a different means  
> of identifying the end of the packet, such as header-length-data. It  
> would be a complete re-write...

KISS and AX.25 have something like this, for its own special char (0x7F  
for AX.25 and I think 0xFE for KISS). They have a simple padding mechanism  
to represent these chars without sending them. Very little overhead and you  
get a full transparent 8 bit path.

> >In any case, my interest here is that the APRS-WG consider new ideas and  
> >not hobble APRS v2.0 with any personal bias or past flawed practices. Lets  
> >keep a open mind to others ideas. And lets not assume just because that is  
> >how we always have done it is the way we should always do it.  
> >  
> There are problems. Besides the need to change APRServe to handle the  
> 0x0d character as data, all the IGates would need to be changed as well,  
> and all the clients would need to be updated.

How many releases of WINAPRS are there a year? How many releases  
a year of APRS-SA4 are there a year? UI-VIEW? I know there is a release  
of XASTIR (at least a development version) at least every week it seems.  
So until the authors chime in and say they are adverse to change, I  
will assume by the volume of updates they all put out, they are always  
open to new ideas.

I realize nothing will be overnight. The "APRS 2.0" changes  
could be integrated into the software over time, and a change/over date  
could made for all.

And since your now going to APRS-XML-Server, any APRSSERVE  
legacy issues will go away in time.

But first steps first. I was simply asking that first these technical ideas be  
considered, and then we can talk about the political issues of why people  
won't want to change. If the changes make no sense technically, then  
its pointless to discuss political reasons why people won't change.

> As Brent pointed out, some  
> digis don't pass the 8 bit data, that would need to be tracked down and  
> fixed.

As I pointed out to Brent in a private message, I've used KISS since about  
1986, exclusively (except for APRS) and I have never seen this problem.  
KISS is used with NOS, FBB, MSYS, BPQ, WØRLI and many other  
applications. If there was a problem, I think we might have heard of it.  
I'm not at all saying Brent is wrong, I'm just saying a little more  
investigation need be carried out before it becomes a quotable fact/  
conclusion KISS won't work on all digi's. I doubt this is a issue as  
KISS is a worldwide standard (well, actually, it has evolved somewhat  
outside of the US... 6pack and SMACK being two varients... but  
they are all are compatible over the air)

Now before we get into the Kenwood D7 issue, a question needs to be  
answered. It is:

Is anyone on the APRS-WG under a contractual agreement with Kenwood?

I think in any discussion of Kenwood/APRS, pro or con, needs to be made in  
the context of full disclosure and knowing who might be beholding to who.

- > Then there is the issue of the D7's EEPROM. For those that do not know,
- > the D7 EEPROM can only be updated by using a special programmer and
- > soldering wires to the circuit board.

Yeah, I guess you can't expect hams to know how to solder...but I bet the 15 year old hacker down the street knows how to solder. In either case, if the ham can't solder, many people could do it for him/her for \$\$

On the programmer, I think you underestimate ham/hacker ingenuity. I just finished building a "RIB", which is the Motorola programmer for their FLASH based commercial radios. I'm sure they hold that as close to heart, but schematics are posted all over the internet.

- > If I were designing it I would have
- > done this differently, as I'm sure you would have. However, it exists.
- > Any change to the protocol that affects the D7 means committing every
- > owner to sending these devices to Kenwood for reprogramming. A major
- > inconvenience, and probably expense, since I doubt Kenwood would consider
- > this a warranty repair. As Bob points out, there are more of these
- > already than all registered APRS users. How would you deal with them?

Good issues. But I question if the WG should even consider these. First of all, if anyone on the WG is under a contractual agreement with Kenwood, this had poisoned the well already, so to speak. And the more basic issue of should Kenwood drive the future of APRS, just because they made a bad business decision, needs to be addressed. And if so, I think the WG needs to give every manufacturer a vote on the WG. Maybe ICON has a different way than Kenwood. But a better solution is to just completely negate any outside commercial interests.

I also think you underestimate Kenwood. If there was a compelling business reason to update the firmware (like upset owners wanting new features) then they would find a way to do it. I was told by Bob that the Kenwood is a flash based radio, so it should be possible if the will exists. Quite frankly, I think Kenwood would be open to changes as it would insure them of a continued revenue stream from D7 owners needed to update the firmware. Kantronics certainly knows about this.

- > What do you really gain by going to full 8 bits from base-91? A bit and a
- > half, give-or-take, for each byte. The base 91 format encodes the course,
- > speed, altitude, symbol, and lat/lon in 12 characters. So you could save
- > one byte for sure, probably 2. Sure, it would be more elegant, less
- > kludgy, but the savings would be less than 20%, and far less in actual
- > channel capacity when you consider the 30% optimal load and tx time. Is
- > that worth all of this angst?

Look ahead, look ahead... we are not talking 20% savings but 50% or more savings of total air time. With those extra bits, you can rearrange things to make more sense and pack the bits a little better. And there really is no compelling reason even to stay with AX.25. AX.25 is a connected mode protocol poorly suited for broadcast applications. How do you do FEC on it? (you can't) So, sure, if your assuming APRS is always married to AX.25, your argument makes some sense. But what I (and I think others are suggesting) is to optimize the existing protocol (which \*will\* still work under AX.25) and then we also have a protocol that makes sense for other more advanced transport methods. And yes, a \$59 PIC-E can do FEC (with a Ramtron chip).

- > I think all of us would do things differently if we could throw out
- > everything we have and start from scratch. If APRS were the few dozen
- > people on the list that would be a viable option. With thousands of hams
- > around the world using it, hundreds of digis, and thousands of
- > difficult-to-reprogram radios, I don't feel a new start is a viable
- > option, and I remain committed to making things work as best we can with
- > what we have.

I've been in packet radio since 1984. I've seen numerous \*major\* changes, like from AX.25 level 1.0 to AX.25 level 2.0. Changes in the BBS forwarding protocols. Complete rewrites/new protocols in KA9Q NOS. All these changes affected more people then are on APRS. We all survived and thrived. It does need to made clear that no-one is suggesting change for the sake of change. But if something makes some sense, I would ask that the APRS-WG consider it with an open mind.

It is premature for you to dismiss these ideas as you appear to be doing. We are not even at the "APRS 2.0" stage. On one hand it is suggested people present new ideas, but on the other you basically tell us how you will vote on them (no). Why would anyone waste their time writing

an extension for APRS 2.0 when they know it will never be incorporated by the APRS-WG?

I don't think anyone here is suggesting we throw out APRS version 1.0 as you may fear. But I do think that APRS needs to be able to evolve in a orderly fashion. And staying with all the legacy decisions that we made when APRS was first created will not allow this evolution.

-Jeff wb8wka

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## 68. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)>  
Date: Sun, 12 Dec 1999 16:21:19 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54830-1999.12.12-15.36.47--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54830-1999.12.12-15.36.47--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 12/12/99 4:14 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:

>And since your now going to APRS-XML-Server, any APRSSERVE  
>legacy issues will go away in time.  
>

XMLServe does not replace APRServe, they have very different functions.  
See <http://www.aprs.net/xml/dcc99.html> for my DCC paper about it.

Steve K4HG

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## 69. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sun, 12 Dec 1999 16:40:23 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54831-1999.12.12-15.52.50--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54831-1999.12.12-15.52.50--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Steve Dimse wrote:

> On 12/12/99 4:14 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:  
>  
> >And since your now going to APRS-XML-Server, any APRSSERVE  
> >legacy issues will go away in time.  
> >  
> XMLServe does not replace APRServe, they have very different functions.  
> See <http://www.aprs.net/xml/dcc99.html> for my DCC paper about it.

OK, but I got the following on 10/14/99 from another member of the WG:

>I think in Steve Dimse's mind there are two practical reasons why he doesn't  
>want to formally document APRServ now. First, he's on vacation and will be  
>travelling until, I think, nearly the end of the month. It's a pretty-  
>much computer-free vacation; he's only been on email a couple of times since  
>the DCC. Second, I think he views APRServ as a dead-end, and views the new  
>XML approach as its replacement. Therefore, it makes sense in his mind for  
>any documentation effort to focus on that as the going-forward protocol.

So, as you can see, even a member of the WG made the same mistake as I that  
APRServe would be going away after time.

Sorry.

-Jeff

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## 70. [aprsspec] Re: Comment Period

From: John Ackermann <jra@febo.com>  
Date: Sun, 12 Dec 1999 17:08:41 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54840-1999.12.12-16.23.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> I would sincerely request that the comment period be extended by a few  
> days, at least. I see no reason to rush it, and I am barely past the  
> description of the destination field!!  
>  
> Jim Wagner  
> Oregon Research Electronics

Hi Jim --

I understand your desire for a longer review period, and I've passed  
your request on to the Working Group.

John

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## 71. [aprsspec] Re: APRS 2.0 (non-ascii)

From: Tim Salo <salo@networkcs.com>  
Date: Sun, 12 Dec 1999 19:59:40 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54886-1999.12.12-20.14.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: steve.sampson@hushmail.com  
> Date: Sun, 12 Dec 1999 05:01:40 -0600 (CST)  
> Subject: [aprsspec] Re: APRS 2.0 (non-ascii)  
>  
> >Agreed Jeff. However, the biggest single obstruction to progress is  
> >not really personal bias or past flawed practices. It is the Kenwood  
> >TH-D7. Its "firm" ware is effectively "rock-solid-concrete" ware (I  
> >know, in theory you \*can\* get the firmware changed if you return it  
> >to depot, but how many people will actually do that?). Kenwood's  
> >commercial decision not to include flash upgradable firmware is  
> >incomprehensible.  
>  
> They don't want Hams to use the radio for their own software development  
> which a flash would allow.  
> [...]

User-loadable firmware does not necessarily imply user-programmability.

The TH-D7 could easily be built to accept firmware only if it was  
digitally (cryptographically) signed by Kenwood. I will write up an  
extended version of my earlier e-mail on this topic and send it to Kenwood,  
(but not until after this week's program review.) (I probably won't read  
the spec until then either...)

-tjs

---

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## 72. [aprsspec] Data Format Question

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Mon, 13 Dec 1999 00:20:05 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54923-1999.12.13-01.35.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On page 83, the reference to "Object Report Format - with Lat/Long position",

two format symbols are specified. I cannot tell whether the second is "-"  
or "\_". Please clarify!

A bit further down on the same page, "Item Report Format - with Lat/Long

position" suggests that item name is variable length. This seems a bit strange since object names are fixed length padded with spaces. Why not more consistency?

Many thanks...

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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### 73. [aprsspec] More Format Question(s)

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 13 Dec 1999 00:26:42 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-54924-1999.12.13-01.42.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On page 83, in the "Weather Report Format - with Lat/Long position", it is NOT obvious to me how one distinguishes weather report from other formats using the same symbols (!=/@).

Many thanks, again,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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---

### 74. [aprsspec] Some questions about APRS digipeater

From: "Marco Savegnago" <[msave@tin.it](mailto:msave@tin.it)>  
Date: Mon, 13 Dec 1999 3:3:31  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-54929-1999.12.13-03.18.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, I'm relatively new on APRS and I've some questione about the rule of a digipeater installed to serve a wide area (in my case it is installed on a hill).

Actually I have a TNC2 digipeater that perform simple repetition of the packet with the broadcast path set to RELAY WIDE, but I want to understand the rule for call substitution.

Here's the questions:

What is the general rule for call substitution on a WIDE digipeater ?

A digipeater make call substitution on RELAY?  
A digipeater make call substitution on WIDE?  
A digipeater make call substitution on TRACE?  
A digipeater make call substitution on SS?

What path a digipeater use to send its beacon (none or RELAY, WIDE, or WIDE WIDE, or what) and what is its destination? (In my case I'm using a TNC2 with my own code do I need to use APZxxx?)

A digipeater reply to "?APRS?" (or other) query?

And if yes it use the default unproto path or none?

I don't have linux at my home and there is no aprsdigi in my area so I cannot try how aprsdigi perform the repetition of APRS frames.

I've tried to understand form the documentation but I'm not sure, so here there is 3 pratical questions.

Case 1: RELAY, WIDE frame digipeated from 2 WIDE digipeater

A frame like this:  
IW3FQG>APRS v RELAY, WIDE

will be repeated from the first digi:  
IW3FQG>APRS v RELAY\*, WIDE

and then the second make the call substitution:  
IW3FQG>APRS v RELAY, DIGI\*

Is it correct?

Case 2: RELAY, WIDE1-1 frame digipeated from 2 WIDE digipeater

A frame like this:  
IW3FQG>APRS v RELAY,WIDE1-1

will be repeated from the first digi:  
IW3FQG>APRS v RELAY\*, WIDE1-1

and then from the second digi:  
IW3FQG>APRS v RELAY\*, WIDE1-0

then the third make the call substitution:  
IW3FQG>APRS v RELAY, WIDE1-0\*

Is it correct?

Case 3: RELAY, TRACE1-1 frame digipeated from 2 WIDE digipeater

A frame like this:  
IW3FQG>APRS v RELAY,TRACE1-1

will be repeated from the first digi:  
IW3FQG>APRS v RELAY\*, TRACE1-1

and then from the second digi:  
IW3FQG>APRS v RELAY, DIGI1\*, TRACE1-0

and then from the third digi:  
IW3FQG>APRS v RELAY, DIGI1, DIGI2\*

Is it correct?

I've read the protocol spec draft 1.0g but I never see a pratical example like for other arguments in the specs.

Thank you in advance for the reply.

Marco IW3FQG

---

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---

## 75. [aprsspec] Re: Data Format Question

From: Steve Sampson <ssampson@www.usa-site.net>  
Date: Mon, 13 Dec 1999 05:59:49 -0600 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-54941-1999.12.13-06.14.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> On page 83, the reference to "Object Report Format - with Lat/Long position",

You mean on page 45? The yellow highlight, gray printing works for me, as it shows it to be a dash. Without the highlight it would be a problem though.

> two format symbols are specified. I cannot tell whether the second is "-"  
> or "\_". Please clarify!

>

> A bit further down on the same page, "Item Report Format - with Lat/Long  
> position" suggests that item name is variable length. This seems a bit  
> strange since object names are fixed length padded with spaces. Why not  
> more consistency?

Things stand out when you document them :-)

---

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---

## 76. [aprsspec] Re: More Format Question(s)

From: Steve Sampson <[ssampson@www.usa-site.net](mailto:ssampson@www.usa-site.net)>  
Date: Mon, 13 Dec 1999 06:01:32 -0600 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-54942-1999.12.13-06.16.31--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54942-1999.12.13-06.16.31--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> On page 83, in the "Weather Report Format - with Lat/Long position", it is

You mean on page 51 (the page numbers are at the top).

---

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---

## 77. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 13 Dec 1999 09:23:01 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54958-1999.12.13-09.24.07--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54958-1999.12.13-09.24.07--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sat, 11 Dec 1999, Paul Keinanen wrote:

> >Base 91 is a neat trick to ensure that on-air characters are printable  
> >ASCII.  
>  
> Thanks for the explanation, the situation is as bad as I have  
> feared:-(.  
>  
> If this vendor specific format is really going to be endorsed by  
> including it into the APRS 1.0 specification, then this clarification  
> is really needed in the specification...

It is not vendor specific. It was developed by the authors back in the summer of 1998 before it was implemented by Kenwood. The objectives were, short, printable, and resolution to DGPS accuracy...

Bob

---

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---

## 78. [aprsspec] Re: Net names

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 13 Dec 1999 10:33:26 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-54971-1999.12.13-09.49.26--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-54971-1999.12.13-09.49.26--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sat, 11 Dec 1999, Jim Wagner wrote:

> On page 19, the set of APRS-recognized destination "callsigns" (term used

> under duress) includes "RTCM" and "TLM". What are they used for?

DGPS and TELEMETRY

>

> The earlier recognized set included "SKYWARN". This seemed very useful. Is

> this now supposed to fall under "SKY\*"??

YES

>

> Many thanks,

>

> Jim Wagner

> Oregon Research Electronics

> -----

> wagnerj@proaxis.com                      Tangent, Oregon 97389

> KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of

> ka7ehk@yahoo.com                        Oregon State University

> -----

> A computer without Windows is like a cake without mustard. - anonymous

>

>

>

>

> ---

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>

>

APRSDos REPLY/COMMENT:

Reply mail addr:   wb4apr@amsat.org  
 US mail address:   115 old Farm Ct, Glen Burnie, MD 21060  
 See DAYTON97 HISTORY:   http://web.usna.navy.mil/~bruninga/dayton.html  
 See Maryland APRS LIVE:   http://web.usna.navy.mil/~bruninga/aprs.html  
 See GPS on ANY radio:   http://www.tapr.org/tapr/html/mic-e.html

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## 79. [aprsspec] Re: Base-91 (was Destination Field - Grid Square)

From: Bob Bruninga <bruninga@nadm.navy.mil>  
 Date: Mon, 13 Dec 1999 11:08:58 -0500 (EST)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-54975-1999.12.13-10.23.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

On Sun, 12 Dec 1999, Ian Wade wrote:

> To anyone still thinking of buying a D7, don't waste your money. You'll

> be stuck with a dinosaur. I don't know about the D700 -- does it support

> flash upgrade? If not, don't buy that either. The modem vendors learned

> years ago that the world is changing by the day, and they were forced to

> support flash upgrades to survive. Kenwood has to do the same. We cannot

> let a feet-dragging vendor hold back the advancement of APRS.

Carefull...

With the demise of amateur radio, the death of Amateur Manufacturers by the droves, in the few years you are predicting a dinosaur, the only thing you will be able to buy will be the latest cell-phone and personal digital assistant that everyone else on the planet is buying.. AMateur radio willll not exist at any price... unless you build it yourself.

Deciding what is "best" for the protocol is NOT just a technical issue...

And of course, by then we will all be pirates, since they also sold our spectrum too...

---

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## 80. [aprsspec] Re: Comment Period

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 13 Dec 1999 11:32:20 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54986-1999.12.13-10.48.09--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 12 Dec 1999, John Ackermann wrote:

> Hi Jim --  
>  
> I understand your desire for a longer review period, and I've passed  
> your request on to the Working Group.  
>  
> John

I would like the Holidays off! Im behind, burned out, and will be traveling to grandparents for Xmas. I cannot keep this up...

Bob

---

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## 81. [aprsspec] Re: Data Format Question

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 13 Dec 1999 12:21:54 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54998-1999.12.13-11.37.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 13 Dec 1999, Jim Wagner wrote:

> A bit further down on the same page, "Item Report Format - with Lat/Long  
> position" suggests that item name is variable length. This seems a bit  
> strange since object names are fixed length padded with spaces. Why not  
> more consistency?

It is consistent with our .POS files which define all OVERLAY objects on maps. Unfortunately, since these files are "not on-air-protocol", you wont see the "consistency"... :-)

These "timeless" objects and "items" dont need the time field and so the format is different from OBJECTS transmitted over the air...

Bob

---

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---

## 82. [aprsspec] Re: More Format Question(s)

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 13 Dec 1999 12:25:12 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-54999-1999.12.13-11.40.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 13 Dec 1999, Jim Wagner wrote:

> On page 83, in the "Weather Report Format - with Lat/Long position", it is  
> NOT obvious to me how one distinguishes weather report from other formats  
> using the same symbols (!=/@).

By the Symbol Type. The above "type" characters distinguish the "types" of position reports. But ANY position report or OBJECT that uses the WEATHER symbols can contain WX data. Those are the Primary and secondary /\_/\_ and /W, \W symbols...

Bob

---

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### 83. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Mon, 13 Dec 1999 19:47:34 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55047-1999.12.13-19.00.04--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55047-1999.12.13-19.00.04--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob:

I think Paul had good reason to be confused. Today you stated that the spec was developed outside of the influence of the vendor where as on Dec1 you said the vendor imposed a deadline for the spec on the authors. Are these one in the same or are we talking two different things here?

-Jeff

(also see second attachment below)

Bob Bruninga wrote on Dec 13, 1999:

```
> On Sat, 11 Dec 1999, Paul Keinanen wrote:
>
> > Base 91 is a neat trick to ensure that on-air characters are printable
> > > ASCII.
> >
> > Thanks for the explanation, the situation is as bad as I have
> > feared:-(.
> >
> > If this vendor specific format is really going to be endorsed by
> > including it into the APRS 1.0 specification, then this clarification
> > is really needed in the specification...
>
> It is not vendor specific. It was developed by the authors
> back in the summer of 1998 before it was implemented by Kenwood. The
> objectives were, short, printable, and resolution to DGPS accuracy...
>
> Bob
```

But previous to the above it was stated (implying a less than arms length relationship):

Bob Bruninga wrote on 1 Dec 1999 (On APRSSIG)::

```
> On Wed, 1 Dec 1999, Jeff Brenton wrote:
>
> > Compressing the data was something that was being worked upon, but the
> > Kenwood APRS HT doesn't handle non-Mic-E compression, so it's
> > implementation been postponed indefinitely.
>
> No. The Kenwood DOES support the compressed algorithm. Getting the
> SPEC agreed to by August 98 was the deadline in order to make production
> of the THD7. Its in there, with a suggested implementation date of 1 Jan
> 99. But since not all APRS versions have completed implementing it, we
> have held off transmitting it for almost a year now... Even though the
> Kenwood is ready...
>
> Bob
```

---

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### 84. [aprsspec] Weather Report format

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 13 Dec 1999 21:56:28 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55072-1999.12.13-23.11.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55072-1999.12.13-23.11.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 13 Dec 1999, Jim Wagner wrote:

On page 83, in the "Weather Report Format - with Lat/Long position", it is NOT obvious to me how one distinguishes weather report from other formats using the same symbols (!=/@).

Bob Bruninga answered:

By the Symbol Type. The above "type" characters distinguish the "types" of position reports. But ANY position report or OBJECT that uses the WEATHER symbols can contain WX data. Those are the Primary and secondary /\_.\\_ and /W, \W symbols...

Jim Wagner adds the following comment:

With all due respect, I think this is one of the worst possible ways to specify a format. You have to get much of the way through the packet before you find out what it is (you have to read the second symbol character before you can be certain). Weather position SHOULD HAVE ITS OWN DATA TYPE CHARACTER(S).

To make matters worse, I could not find the above condition described Bob Bruninga anywhere in the spec. It may be there somewhere, but, if it is, its very well hidden.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 85. [aprsspec] Shelter Data Type Identifier

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 13 Dec 1999 21:56:54 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55073-1999.12.13-23.12.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On page 22, "+" is identified as "Shelter Data with time". Yet, this data type is absent from any subsequent data type descriptions. Either, the data type description should be added or the identifier should be removed from the table.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 86. [aprsspec] Data Type symbol info Please

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 13 Dec 1999 23:00:23 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55086-1999.12.14-00.15.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain



Greetings -

While perusing the current draft of the spec, I came across the following dilemma:

I cannot find out what the symbol is for "current Mic-E data", the one in the right-hand column of the table on Page 16 (identified as page 22 of 99 by Acrobat) just above "a-z".

When I select this character and paste it into the Find dialog, it also finds the same character on Page 39 (Acrobat's 45 of 99). But, IT DOES NOT FIND SAID CHARACTER IN THE ASCII TABLE.

What character is this????

Many thanks,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM      near Corvallis OR, home of  
ka7ehk@yahoo.com      Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 87. [aprsspec] XJ1 format request

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 13 Dec 1999 23:20:33 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55088-1999.12.14-00.35.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello -

On page 17 (acrobat's 23 of 99), it says:

Note: There is one exception to the requirement for the Data Type Identifier to be the first character in the Information field - this is the Position without Timestamp (indicated by the ! Data Type Identifier). The ! character may occur anywhere up to and including the 40th character position in the Information field. This variability is required to support X1J TNC digipeaters which have a string of unmodifiable text at the beginning of the field.

Could someone please supply an example of the text resulting from this situation?

Many thanks,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM      near Corvallis OR, home of  
ka7ehk@yahoo.com      Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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---

## 88. [aprsspec] Re: Data Type symbol info Please

From: Steve Sampson <[ssampson@www.usa-site.net](mailto:ssampson@www.usa-site.net)>  
Date: Tue, 14 Dec 1999 04:40:08 -0600 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)

Message-ID: <LYR11589-55101-1999.12.14-04.55.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

It's called a grave accent. It's a very common symbol in Unix (usually found just above the tab key). ASCII code 96.

> I cannot find out what the symbol is for "current Mic-E data", the one in  
> the right-hand column of the table on Page 16 (identified as page 22 of 99  
> by Acrobat) just above "a-z".

---

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---

## 89. [aprsspec] Re: Shelter Data Type Identifier

From: Steve Sampson <ssampson@www.usa-site.net>  
Date: Tue, 14 Dec 1999 04:53:15 -0600 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-55102-1999.12.14-05.08.10--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The page numbers are located at the top of each page. You probably mean page 16. The acrobat page number is worthless.

> On page 22, "+" is identified as "Shelter Data with time". Yet, this data  
> type is absent from any subsequent data type descriptions. Either, the data  
> type description should be added or the identifier should be removed from  
> the table.

---

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## 90. [aprsspec] Commercial considerations?

From: Roger Barker <roger@peaksys.co.uk>  
Date: Tue, 14 Dec 1999 11:19:58 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55103-1999.12.14-05.35.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

(I hope this doesn't repeat comments that have already been made, but I only found the time to start reading the spec yesterday.)

Some aspects of the spec appear to me to be based more on commercial considerations than on what is really desirable in a protocol specification. Surely a basic goal of a spec of this type should be to make it platform and product independent?

First, there is a list of destination addresses that serve little purpose other than software/hardware product advertising:-

>The following software version types are reserved (xx and xxx indicate  
>a version number):  
>APCxxx APRS/CE, Windows CE  
>APExxx PIC-Encoder  
>APIxxx Icom radios (future)  
>APICxx ICQ messaging  
>APKxxx Kenwood radios  
>APMxxx MacAPRS  
>APPxxx pocketAPRS  
>APRxxx APRSdos  
>APRS older versions of APRSdos  
>APRSM older versions of MacAPRS  
>APRSW older versions of WinAPRS  
>APSxxx APRS+SA  
>APWxxx WinAPRS  
>APXxxx X-APRS  
>APYxxx Yaesu radios (future)  
>APZxxx Experimental

(That lot is roughly the equivalent of the authors of the AX25 spec having included a facility to specify in each frame the type of TNC being used!)

Second, there are the frequent references to Kenwood radios, even to the extent of including their type numbers. Is the working group going to update the spec every time Kenwood produce a new radio?

I would make two suggestions:-

1. Either -

(a) Only destination addresses that contain \*protocol\* information should be allowed. Or

(b) Any destination address should be acceptable. I.e. no APRS software should default to discarding frames because the destination address is not one of those listed in the spec. This makes little difference, other than removing a filter that is logically unnecessary, and which introduces a bias against new software/hardware products. Destination addresses that contain protocol information will be treated exactly as they are now, but, for instance, ABC326 will be just as acceptable (and, from the point of view of the protocol information it contains, just as useless) as APM326.

2. The members of the working group need to have a good, hard think about the desirability of including in the spec references to specific items of equipment from one manufacturer. One thing for sure is that the rest of us are always going to be wondering exactly why they did it. The TH-D7 is a great radio, but that isn't a valid reason for including references to it in a protocol specification.

--

Roger Barker, G4IDE roger@peaksys.co.uk  
Boston, UK http://www.packetradio.org.uk

---

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---

## 91. [aprsspec] APRS-99

From: Steve Sampson <ssampson@www.usa-site.net>  
Date: Tue, 14 Dec 1999 06:11:06 -0600 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55104-1999.12.14-06.26.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I noticed the reference to a Kenwood TM-D700 radio. I never heard of it, so I reached for my AES catalog, and found an Ad for it on page 72 (Winter 1999-2000).

It advertises that it has advanced APRS-99 features.

- 1) What is APRS-99?
- 2) Does that mean it can decode TAPR equipment?
- 3) Should the spec be changed to APRS-99 instead of 1.0?

73,  
Steve, K5OKC

---

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## 92. [aprsspec] Re: Commercial considerations?

From: John Ackermann <jra@febo.com>  
Date: Tue, 14 Dec 1999 08:03:05 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55107-1999.12.14-07.18.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi Roger --

Thanks for your comments. I don't want to address substantive questions about the protocol (I'll leave that to those more knowledgeable), but your message gives me a opportunity to reiterate something for those who are just joining the discussion:

The goal of version 1.0 of the APRS Protocol Specification is to document the APRS on-air protocols as they are currently used. That means that we're documenting some things that are, shall we say, suboptimal. There are things that could -- and perhaps should -- be changed, but the WG made a conscious decision not to address any changes to the protocol in the version 1.0 document, which is intended to provide a baseline of where we are today. Those discussions will happen after version 1.0 is locked down; we'll have an ongoing process in place to handle requests for protocol

changes submitted by the public.

While I've got the floor, I'll also note that folks have pointed out that version 1.0 does, in fact, make a couple of changes to the existing protocols -- mainly, by not including a few deprecated constructs. Based on the feedback we've received, we'll review those decisions and try to come up with a way to document those aspects without perpetuating them.

Thanks,

John N8UR (jra@febo.com)  
Administrative Chair, APRS Working Group

-----  
In message <LYR11592-55103-1999.12.14-05.35.59--n8ur#tapr.org@lists.tapr.org>, Roger Barker writes:  
>(I hope this doesn't repeat comments that have already been made, but I  
>only found the time to start reading the spec yesterday.)  
>  
>Some aspects of the spec appear to me to be based more on commercial  
>considerations than on what is really desirable in a protocol  
>specification. Surely a basic goal of a spec of this type should be to  
>make it platform and product independent?  
>  
>First, there is a list of destination addresses that serve little  
>purpose other than software/hardware product advertising:-  
>  
>>The following software version types are reserved (xx and xxx indicate  
>>a version number):  
>>APCxxx APRS/CE, Windows CE  
>>APExxx PIC-Encoder  
>>APIxxx Icom radios (future)  
>>APICxx ICQ messaging  
>>APKxxx Kenwood radios  
>>APMxxx MacAPRS  
>>APPxxx pocketAPRS  
>>APRxxx APRSdos  
>>APRS older versions of APRSdos  
>>APRSM older versions of MacAPRS  
>>APRSW older versions of WinAPRS  
>>APSxxx APRS+SA  
>>APWxxx WinAPRS  
>>APXxxx X-APRS  
>>APYxxx Yaesu radios (future)  
>>APZxxx Experimental  
>  
>(That lot is roughly the equivalent of the authors of the AX25 spec  
>having included a facility to specify in each frame the type of TNC  
>being used!)  
>  
>Second, there are the frequent references to Kenwood radios, even to the  
>extent of including their type numbers. Is the working group going to  
>update the spec every time Kenwood produce a new radio?  
>  
>I would make two suggestions:-  
>  
>1. Either -  
>  
>(a) Only destination addresses that contain \*protocol\* information  
>should be allowed. Or  
>  
>(b) Any destination address should be acceptable. I.e. no APRS software  
>should default to discarding frames because the destination address is  
>not one of those listed in the spec. This makes little difference, other  
>than removing a filter that is logically unnecessary, and which  
>introduces a bias against new software/hardware products. Destination  
>addresses that contain protocol information will be treated exactly as  
>they are now, but, for instance, ABC326 will be just as acceptable (and,  
>from the point of view of the protocol information it contains, just as  
>useless) as APM326.  
>  
>2. The members of the working group need to have a good, hard think  
>about the desirability of including in the spec references to specific  
>items of equipment from one manufacturer. One thing for sure is that the  
>rest of us are always going to be wondering exactly why they did it. The  
>TH-D7 is a great radio, but that isn't a valid reason for including  
>references to it in a protocol specification.  
>  
>--  
>Roger Barker, G4IDE roger@peaksys.co.uk

>Boston, UK                   http://www.packetradio.org.uk  
>  
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### 93. [aprsspec] Re: Commercial considerations?

From: Roger Barker <roger@peaksys.co.uk>  
Date: Tue, 14 Dec 1999 14:11:42 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55111-1999.12.14-08.27.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-55107-1999.12.14-07.18.06--roger#peaksys.co.uk@list  
s.tapr.org>, John Ackermann <jra@febo.com> writes  
>Hi Roger --  
>  
>Thanks for your comments. I don't want to address substantive questions  
>about the protocol (I'll leave that to those more knowledgeable), but your  
>message gives me a opportunity to reiterate something for those who are  
>just joining the discussion:  
>  
>The goal of version 1.0 of the APRS Protocol Specification is to document  
>the APRS on-air protocols as they are currently used. That means that  
>we're documenting some things that are, shall we say, suboptimal. There  
>are things that could -- and perhaps should -- be changed, but the WG made  
>a conscious decision not to address any changes to the protocol in the  
>version 1.0 document, which is intended to provide a baseline of where we  
>are today. Those discussions will happen after version 1.0 is locked down;  
>we'll have an ongoing process in place to handle requests for protocol  
>changes submitted by the public.

I did, of course, understand that. Therefore I limited my comments to  
aspects of the document that do not have any protocol content. As I  
pointed out, the destination addresses that are used essentially for  
product advertising contain no protocol information, nor do the  
references to specific Kenwood radios.

Since V1.0 will obviously form the basis for future changes, my question  
is quite simple - Given that these aspects of APRS operation have no  
protocol content, should they be in a \*protocol\* specification? If the  
answer is yes, then obviously someone will be able to explain exactly  
what protocol information they contain that I am missing.

To repeat what I said in my first message - Surely a basic goal of a  
spec of this type should be to make it platform and product independent?

--  
Roger Barker, G4IDE   roger@peaksys.co.uk  
Boston, UK           http://www.packetradio.org.uk

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### 94. [aprsspec] OMISSION or UNCLEAR: Weather APRS Software Type

From: William Beals <wmbeals@compuserve.com>  
Date: Tue, 14 Dec 1999 08:24:21 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "Russ Chadwick (Home)" <kb0tvj@bouldernews.infi.net>  
Message-ID: <LYR11589-55116-1999.12.14-09.40.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Folks:

[I joined 24 hours ago and have been monitoring for a bit, so I don't know if this issue has been  
addressed already]

I'm working with Steve Bible and a good crew on a stand-alone weather station we hope to have out (very)  
late this year or early next year. As such I'm paying close attention to the weather chapter and am  
confused about how to identify my station.

The issue: I send out the weather data per the format starting on page 50, but don't know how to  
identify my weather station type (APRS Software Type Field) as the only options are things like DOS,  
Windows, etc. I'm "none of the above" as I'm running from a dedicated microcontroller. Can another

option get added for "other" or (ideally from my point of view) an option for "embedded". Even with the latter, an "other" would probably still be a good idea.

I currently send out an identifier of "e1w" for "embedded, 1-wire", but can change that very quickly if there is a better format. When Denver had an igate and my data got out, this identifier worked for all the APRS programs except WinAPRS which interpreted this as one inch of rain. Since the goal is backwards compatibility, I expect to have to change my identifier, I'm not sure to what though.

will

PS: I've worked on specs before, it is a grueling task. My hats off to you!

-----  
This message sent using 100% recycled Electrons  
(Minimum 30% post-consumer content)  
-----

Will Beals  
wmbeals@compuserve.com  
15014 East Idaho Place  
Aurora, CO 80012-4740  
303-755-0293

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---

## 95. [aprsspec] Re: Data Type symbol info Please

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 14 Dec 1999 10:38:41 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55118-1999.12.14-09.54.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55118-1999.12.14-09.54.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 13 Dec 1999, Jim Wagner wrote:

> I cannot find out what the symbol is for "current Mic-E data", the one in  
> the right-hand column of the table on Page 16 (identified as page 22 of 99  
> by Acrobat) just above "a-z".  
>  
> When I select this character and paste it into the Find dialog, it also  
> finds the same character on Page 39 (Acrobat's 45 of 99). But, IT DOES NOT  
> FIND SAID CHARACTER IN THE ASCII TABLE.

One is the Apostrophe and the other is the grave accent. "'" and "`".  
Id have to look it up to see which one is for Current data and which one  
is for OLD data...

Bob

---  
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---

## 96. [aprsspec] Re: [aprsspec]Base-91 (was Destination Field - Grid Square)

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 14 Dec 1999 10:54:24 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55122-1999.12.14-10.14.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55122-1999.12.14-10.14.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 13 Dec 1999, Jeff King wrote:

> I think Paul had good reason to be confused. Today you stated  
> that the spec was developed outside of the influence of the  
> vendor where as on Dec1 you said the vendor imposed a  
> deadline for the spec on the authors. Are these one in the  
> same or are we talking two different things here?

The vendor imposed no such deadline. But we certainly knew when was the  
last opportunity to influence what they would implement and what they  
wouldnt implement as they went to production.

It would have been stupid not to be aware of such relevant things going on around us...

Bob

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## 97. [aprsspec] Re: Commercial considerations?

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 14 Dec 1999 11:00:15 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55124-1999.12.14-10.16.20--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55124-1999.12.14-10.16.20--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Tue, 14 Dec 1999, Roger Barker wrote:

> First, there is a list of destination addresses that serve little  
> purpose other than software/hardware product advertising:-

The identification of the hardware/software type is for troubleshooting..  
It is exasperating to troubleshoot packets from unidentified stations and  
trackers that are not listening and you have no way to get in contact with  
the sender...

> I would make two suggestions:-

>

> (b) Any destination address should be acceptable. I.e. no APRS software  
> should default to discarding frames because the destination address is  
> not one of those listed in the spec. This makes little difference, other  
> than removing a filter that is logically unnecessary, and which  
> introduces a bias against new software/hardware products.

Anything starting with an "AP" is valid. The filter for other non listed  
destinations is essential for the ALT-NET concept to work. Please look  
carefully at that section. We must have a way of using the APRS  
Infrastructure for sub-nets without cluttering every single map on  
frequency...

Bob

---

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---

## 98. [aprsspec] Re: OMISSION or UNCLEAR: Weather APRS Software Type

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 14 Dec 1999 11:47:13 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, "Russ Chadwick (Home)" <[kb0tvj@bouldernews.infi.net](mailto:kb0tvj@bouldernews.infi.net)>  
Message-ID: <[LYR11589-55128-1999.12.14-11.09.17--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55128-1999.12.14-11.09.17--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Tue, 14 Dec 1999, William Beals wrote:

> I'm working with Steve Bible and a good crew on a stand-alone weather  
station we hope to have out (very) late this year or early next year. As  
such I'm paying close attention to the weather chapter and am confused  
about how to identify my station.

If its PIC based, then choose one from the APExxx bunch...>

>

> I currently send out an identifier of "e1w" for "embedded, 1-wire"...

That seems to fit nicely with the APExxx bunch.

That list was not meant to be exclusive, but just to give an idea of which  
ones are already in use...

---

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---

## 99. [aprsspec] Re: Commercial considerations?

From: [billc@zebra.net](mailto:billc@zebra.net) (Bill Cleveland)  
Date: Tue, 14 Dec 1999 16:59:17 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55197-1999.12.14-17.16.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

By definition the PALM version would not be fully 1.0 compliant if it could not handle to number of characters in a message specified in the protocol definition.

Remember this protocol is suppose to be a specification from which all APRS clients are measured. We can't have moving goal posts and we can't allow clients to fudge with the specs. The end user should not have to worry about wether or not person on the other end can read more than 40 characters. It would be best to have the PALM version handle the SAME size messages as everybody else.

It would be easier for the PALM programmer to correct the short comings of his program, then to have the rest of the community be burdened by it. The PALM programmer should be forced to comply with the protocol, rather than the other way around.

73,  
Bill

----- Original Message -----

From: Keith Sproul <[ksproul@vger.rutgers.edu](mailto:ksproul@vger.rutgers.edu)>  
To: Bill Cleveland <[billc@zebra.net](mailto:billc@zebra.net)>  
Sent: Tuesday, December 14, 1999 2:32 PM  
Subject: [aprsspec] Re: Commercial considerations?

> All fine and good, BUT, what if a PALM version of APRS that can only  
> display 40char messages is fully version 1.0 compliant, and a Mac or  
> Windows version that is fully version 1.0 compliant, want to talk.  
> If the person that is sending TO the Palm version 1.0 is smart  
> enough, they might make it easier for the PALM version to read the  
> messages, etc..  
>  
>

---

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---

## 100. [aprsspec] UNCLEAR: DF element

From: "Michael J. Allison / KN6GT" <[mallison@livingston.com](mailto:mallison@livingston.com)>  
Date: Tue, 14 Dec 1999 16:37:14 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55205-1999.12.14-18.47.19--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Before I launch into my comment I would like to congratulate the APRS WG for the overall excellence of this draft (1.0.1g) of the APRS specification. I would say it is very "professional", but I've dealt with specifications written by professional engineers that are not as complete or coherently put together. The quality and effort involved in this document is apparent. Thank you very much!

[UNCLEAR]  
Page 27, section entitled "Bearings and Number/Range/Quality"

I am reading this section with interest, since I am one of the developers of the MicroFinder doppler (mentioned in page 16, APRS Data Type Identifier).

The unclear part for me is where the numbers N, R, and Q are derived from.



"N" seems to be some sort of pseudo statistical value, but doesn't indicate what the source of the information is. Does this come from the sending APRS program or the external device (AKA doppler). If the value is to come from the APRS program, the description included in this text is probably not clear enough to produce a consistently reliable implementation from different implementers. If this value is supposed to come from the external device, it sounds like it might be too device dependent (I know of several doppler based systems that do not do anything like this).

The range looks like it is generated by a compliant APRS application... correct?

The output of our doppler unit provides a single number which we call "quality". Is this supposed to be the "quality" value supplied by the doppler (normalized to 0-9) or from some other source?

m/j/a

MicroFinder bearing format information page:  
[http://www.gst.net/~ahha/TN/tech\\_note\\_8.html](http://www.gst.net/~ahha/TN/tech_note_8.html)

Michael J. Allison  
KN6ZT

---

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---

## 101. [aprsspec] Re: Commercial considerations?

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Tue, 14 Dec 1999 21:20:45 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55209-1999.12.14-20.33.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Roger Barker wrote:

> Some aspects of the spec appear to me to be based more on commercial  
> considerations than on what is really desirable in a protocol  
> specification. Surely a basic goal of a spec of this type should be to  
> make it platform and product independent?

Roger:

I can't answer your question, but I asked a similar one myself that never got a coherent response. The lack of a response or even the act of obfuscation itself can be an answer.

-Jeff

Jeff King wrote on 12/12/99:

>Now before we get into the Kenwood D7 issue, a question needs to be  
>answered. It is:  
>  
>Is anyone on the APRS-WG under a contractual agreement with Kenwood?

---

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---

## 102. [aprsspec] Re: Commercial considerations?

From: [billc@zebra.net](mailto:billc@zebra.net) (Bill Cleveland)  
Date: Tue, 14 Dec 1999 15:38:37 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55192-1999.12.14-15.55.09--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

----- Original Message -----

From: Bob Bruninga <bruninga@nadn.navy.mil>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Sent: Tuesday, December 14, 1999 8:00 AM  
Subject: [aprsspec] Re: Commercial considerations?

> On Tue, 14 Dec 1999, Roger Barker wrote:  
>  
> > First, there is a list of destination addresses that serve little  
> > purpose other than software/hardware product advertising:-  
>  
> The identification of the hardware/software type is for troubleshooting..  
> It is exasperating to troubleshoot packets from unidentified stations and  
> trackers that are not listening and you have no way to get in contact with  
> the sender...

If APRS is truly meant to be a hardware independent protocol, then we should stop identifying different variations of the protocol by its originating piece of hardware or software. I believe we should mainly identify the protocol by its version number. Instead of using APM326 to stand for "MacAPRS 3.2.6", we should use APV100 for "APRS Version 1.0.0". There should be no need to concern ourselves with what a transmitting station is running, only with the version of the APRS Protocol being transmitted.

If we used APVxxx to signify APRS protocol Version x.x.x :

It could be assumed that a APRS client running "APV101" should be able to decode "APV100". It could also be assumed that a client running "APV100", may not fully decode all data coming from a station sending "APV101". No meaningful assumptions can be made when a MacAPRS 3.2.6 ("APM326") is sending data to a WinAPRS 2.3.3 ("APW233").

In addition, I believe we should continue to use "APZxxx" to signify an experimental addition to the protocol. For example, "APZ100" could signify that the core protocol is at least compatible with "APV100" with some experimental extensions thrown in.

So if my vote counted for anything, I say ditch the other "APXxxx" and use:

"APVxxx" for APRS compliant version x.x.x  
"APZxxx" for APRS beta version at least compliant to APRS x.x.x

And we should stop using the protocol specification as a registry of vendors who has licensed the term 'APRS'.

Just my two cents worth.

BTW, My apologies if I misunderstood something.

73,  
Bill

---

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---

## 103. [aprsspec] Weather APRS Software type

From: William Beals <wmbeals@compuserve.com>  
Date: Tue, 14 Dec 1999 21:04:28 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55222-1999.12.14-22.21.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob:

Alas I am not using a PIC, in my case it is a Motorola 6808. I was aware of using the destination field for software versions too, and that did seem like a duplication. I was pretty much ignoring that field and concentrating on the trailer for my identifier as that seemed a lot more flexible. I think your answer complicates my original question though. You are correct that I should fix the Target field to something, I guess I'll pick an unused one such as APDAXx (DA for Dallas), so I don't chew up all the D's. But, don't I still need to have something for the trailer to uniquely identify my particular weather station?

I have been using separate packets for position and weather. My theory was that by sending weather

every 5 minutes, but position every 43 minutes, I was saving precious bandwidth. There are obvious annoyances, but they seemed worthwhile to save bandwidth. My station identifier is really short, just my callsign and uncompressed location, none of that other fluff like email addresses and stuff. If I can justify putting in the position, that would be nice.

will

-----  
This message sent using 100% recycled Electrons  
(Minumum 30% post-consumer content)  
-----

Will Beals  
wmbeals@compuserve.com  
15014 East Idaho Place  
Aurora, CO 80012-4740  
303-755-0293

---  
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---

## 104. [aprsspec] Re: UNCLEAR: DF element

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Wed, 15 Dec 1999 08:48:16 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55275-1999.12.15-08.07.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 14 Dec 1999, Michael J. Allison / KN6ZT wrote:

> The unclear part for me is where the numbers N, R, and Q are  
> derived from.  
>  
> "N" seems to be some sort of pseudo statistical value, but doesn't  
> indicate what the source of the information is. Does this come  
> from the sending APRS program or the external device  
> (AKA doppler). If the value is to come from the APRS program,  
> the description included in this text is probably not clear  
> enough to produce a consistently reliable implementation  
> from different implementers. If this value is supposed to come  
> from the external device, it sounds like it might be too  
> device dependent (I know of several doppler based systems that  
> do not do anything like this).

The N7LUE Doppler system preceeded APRS, so we built it to match.  
Then we added Doppler Systems Inc, then we added DFjr parsing.  
Yes, N was somewhat driven by the N7LUE device. If it doesnt apply to  
your doppler unit, then dont use it. We do need to define the Null  
value...

> The range looks like it is generated by a compliant APRS  
> application... correct?

None currently generate it. That field is for a best guess of range "if  
available". APRSdos generates it for manual reports based on the current  
map scale. The assumption is that if a guy is using a 32 mile map scale  
to view his DF event, then he probably expects all DF bearings to be  
within 32 miles. Before we introduced that value, DF bearings could go  
around the world. But, if I am doing HF DFing and am looking at the 1000  
mile scale, then, the DF bearing line should be on the order of 1000 miles  
long...

This brings up the very important APRS concept of "MAP RANGE". I will  
address this in a different Epistel...

> The output of our doppler unit provides  
> a single > number which we call "quality". Is this supposed to be the  
> "quality" value supplied by the doppler (normalized to 0-9)  
> or from some other source?

>From whatever source can make the best estimate...

Bob

---

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---

## 105. [aprsspec] Range Scale

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Wed, 15 Dec 1999 09:06:00 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55277-1999.12.15-08.21.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

One serioius ommission from the SPEC is the concept of RANGE SCALE.  
Although it is not an "ON-AIR" issue, it is fundamental to all tactical display systems and APRS.

Two people viewing the same tactical display centered on the same LAT/LONG can not see the same tactical picture AT ALL, unless they are viewing the area to the same MAP scale. A view centered on the WhiteHouse at the 2 mile scale to see the Marine Corps Marathon, will look almost 100% different to another viewer viewing Washington DC at the 64 mile scale.

I hear it ALL THE TIME. Two people looking at the "same" map and yet not seeing the same thing at all, and arguing by voice over the air that they cannot see what the other person is talking about.

The Army, The Navy, THE Marine Corps, the Airforce, the FAA and APRSdos and everyone else that uses tactical displays ALWAYS refers to RANGE SCALE. This dimension is absolutely critical to exchanging information. APRS is a system of "views". There are THREE variables to a VIEW. LAT/LONG and SCALE.

In my opinion, we should use the same RANGE SCALE system used by all other tactical systems, and that is the RANGE from the center of the screen to the top or bottom. THus If I am looking at the 64 mile RANGE SCALE, then I see all things within 64 miles of me. On a 3/4 CRT, of course, I can "also" see things as much as 100 miles from me to the east andd west, but that is coincidental. The fact that if I am on the "64 mile scale" that I can see "ALL" objects within 64 miles of me is the critical concept.

In APRSdos, if you select METRIC, then these scales are shown in KM. These "views" need not be "precisely" to the edge of the map. APRSdos actually displays about 10% or more beyond the exact "64 mile" ring, but they are important to bound the "scale" of the view.

I will take a look at the spec and look for where this concept should be added. Authors have argued that this is a local display issue. I disagree. Specifiing "views" for comonality in human understanding of tactical events, MUST include not only the CENTER, but also the RANGE.

8 different users of 8 different programs must be able to all see the same thing when one of them says "Go to 3859N 07629W at the 32 mile scale and tell me how many mobiles are there..."...

This is far more than a local display issue....

---

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## 106. [aprsspec] Re: UNCLEAR: DF element

From: "Michael J. Allison / KN6ZT" <mallison@livingston.com>  
Date: Wed, 15 Dec 1999 09:12:56 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55309-1999.12.15-11.23.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob,

Sounds like a bit of explanation on those items,  
such as you added here, would be useful.

Thanks  
mike kn6zt

-----Original Message-----

From: bounce-aprsspec-11766@lists.tapr.org  
[mailto:bounce-aprsspec-11766@lists.tapr.org]On Behalf Of Bob Bruninga  
Sent: Wednesday, December 15, 1999 5:48 AM  
To: APRS Spec Discussion List  
Cc: APRS Spec Discussion List  
Subject: [aprsspec] Re: UNCLEAR: DF element

On Tue, 14 Dec 1999, Michael J. Allison / KN6ZT wrote:

> The unclear part for me is where the numbers N, R, and Q are  
> derived from.  
>  
Quoted reply omitted.

---

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## 107. [aprsspec] Re: Range Scale

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Wed, 15 Dec 1999 14:26:07 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55337-1999.12.15-13.41.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Here is my recommended additon to the SPEC for Range Scale:

Under the general chapter on "Design Philopsohy" add at the bottom of page 11, words to the effect of...:

MAP VIEWS: As a tactical geographical system, users of APRS need to be able to relate "map views" in a non ambiguous way. THus, all map displays should have a meaningful legend to convey to the user, the scale of the map view. To then be able to communicate about such views, there are three coordinates required. Latitude and Longitude of the map center and Range Scale.

In this context, Range Scale is the approximate range in either Nautical miles, Miles, or Killometers from the center of the map to the top or bottom. This convention gives all software users a common basis for describing tactical map views (at whatever range scale is in use).

I hope that does not step on any toes.... But is very important for APRS.

Bob

On Wed, 15 Dec 1999, Bob Bruninga wrote:

> One serioius ommission from the SPEC is the concept of RANGE SCALE.  
> Although it is not an "ON-AIR" issue, it is fundamental to all tactical  
> display systems and APRS.  
>  
> Two people viewing the same tactical display centered on the same LAT/LONG  
> can not see the same tactical picture AT ALL, unless they are viewing the  
> area to the same MAP scale. A view centered on the WhiteHouse at the 2  
> mile scale to see the Marine Corps Marathon, will look almost 100%  
> different to another viewer viewing Washington DC at the 64 mile scale.  
>  
> I hear it ALL THE TIME. Two people looking at the "same" map and yet not  
> seeing the same thing at all, and arguing by voice over the air that they  
> cannot see what the other person is talking about.  
>  
> The Army, The Navy, The Marine Corps, the Airforce, the FAA and  
> APRSdos and everyone else that uses tactical displays ALWAYS refers to  
> RANGE SCALE. This dimension is absolutely critical to exchanging  
> information. APRS is a system of "views". There are THREE variables to a  
> VIEW. LAT/LONG and SCALE.  
>  
> In my opinion, we should use the same RANGE SCALE system used by all other  
> tactical systems, and that is the RANGE from the center of the screen to  
> the top or bottom. THus If I am looking at the 64 mile RANGE SCALE, then  
> I see all things within 64 miles of me. On a 3/4 CRT, of course, I can  
> "also" see things as much as 100 miles from me to the east andd west, but

> that is coincidental. The fact that if I am on the "64 mile scale" that I  
 > can see "ALL" objects within 64 miles of me is the critical concept.  
 >  
 > In APRSdos, if you select METRIC, then these scales are shown in KM.  
 > These "views" need not be "precisely" to the edge of the map. APRSdos  
 > actually displays about 10% or more beyond the exact "64 mile" ring, but  
 > they are important to bound the "scale" of the view.  
 >  
 > I will take a look at the spec and look for where this concept should be  
 > added. Authors have argued that this is a local display issue. I  
 > disagree. Specifiing "views" for comonality in human understanding of  
 > tactical events, MUST include not only the CENTER, but also the RANGE.  
 >  
 > 8 different users of 8 different programs must be able to all see the same  
 > thing when one of them says "Go to 3859N 07629W at the 32 mile scale and  
 > tell me how many mobiles are there..."...  
 >  
 > This is far more than a local display issue....  
 >  
 >  
 >  
 >  
 > ---  
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 >  
 >

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
 US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
 See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
 See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
 See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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## 108. [aprsspec] Fr. Spocs

From: Bob Bruninga <bruninga@nadn.navy.mil>  
 Date: Wed, 15 Dec 1999 14:32:35 -0500 (EST)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-55339-1999.12.15-13.47.45--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

Can we change the Dr. Spocs of this world to "scientists" or something?

Bob

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## 109. [aprsspec] Re: Range Scale

From: Bob Bruninga <bruninga@nadn.navy.mil>  
 Date: Wed, 15 Dec 1999 14:31:39 -0500 (EST)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-55341-1999.12.15-13.58.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

Some more trivia to the spec:

ON page 1 where you refer to my name twice. Can I ask that my call,  
 WB4APR also be included.

On page two where you describe the construct of the working group. can  
 JOHN ACKERMAN please offer some legaleeze to protect us from frivolous  
 litigation with words such as....

USE AT YOUR OWN RISK ... and cannot be held liable for the use or  
 application of this standard or to any dameages that may result... BLAH,  
 BLAH, BLAH...

Bob

---

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## 110. [aprsspec] Net Cycle and WIDEn-N

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Wed, 15 Dec 1999 22:41:14 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55391-1999.12.15-23.56.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello Group -

In the description of Net Cycle on page 9, it seems to overlook the following unproto path: ... VIA WIDE5-5.

To "unsmart" software, this would appear as a 1-digi path and would use the wrong Net Cycle time.

Sincerely,

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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## 111. [aprsspec] Default Null Position

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Thu, 16 Dec 1999 00:08:41 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55410-1999.12.16-01.23.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, group

On page 22 of the draft spec, the idea of a "Default Null Position" is offered. It suggests an appropriate format for a station that cannot determine its position as 0000.00N and 00000.00W.

Unfortunately, this is a real location on the surface of the earth. While the odds of an APRS station being there is very small, the odds are NOT zero.

The earlier paragraph about Position Ambiguity really solves that problem. This is, after all, a situation of nearly-infinite ambiguity. Thus, the format

" . N" and " . W" (that is, spaces in all position digits)

is perfectly logical. And, there is no chance of mis-interpreting it as a position.

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
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A computer without Windows is like a cake without mustard. - anonymous

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## 112. [aprsspec] Data Extensions

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Thu, 16 Dec 1999 00:39:12 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55412-1999.12.16-01.54.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On page 24, it is printed:

A fixed-length, 7-byte field may follow APRS position data. The field is an APRS Data Extension. The extensions may be one of the following:

- \* CSE/SPD ....
- \* DIR/SPD ...
- \* PHGphgd
- \* RNgrrrr
- \* DFSshgd
- \* Tyy/Cxx

What I read seems very contradictory and incomplete. In the quoted sentence at the very start of the section, it talks about "following position data". There are no qualifications, or limitations.

Then, a bit later, it just slips in "can be used to represent the wind direction and sustained one-minute wind speed in a Weather Report."

Is, this, in fact, the wind direction and speed field indicated in "Weather Report Format - with Lat/Long Position" on page 51? If so, that page seems rather silent on the point.

Something, please something, should be done to reduce these ambiguities!!!

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 113. [aprsspec] Opps, my apologies

From: Keith Sproul <[ksproul@vger.rutgers.edu](mailto:ksproul@vger.rutgers.edu)>  
Date: Thu, 16 Dec 1999 07:56:04 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-55422-1999.12.16-07.12.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

For Bill C. and the Spec SIG...

Tuesday I wanted to show that there were differences between APRS platforms, and used a "PALM" as an example.

This was supposed to be hypothetical... but I sort of forgot that there is a real v1.0 of a real Palm program, PocketAPRS. I left the impression that this program didn't handle regular APRS messages, and that's not the case.

So... please... pardon my goof!

Keith  
Keith Sproul  
Student Housing Network Coordinator  
<mailto:ksproul@rci.rutgers.edu>  
<http://dorm.rutgers.edu/~ksproul/>  
732 445-3695 Office  
732 445-2968 Fax  
732 821-4828 Home  
WU2Z

---



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---

## 114. [aprsspec] Re: Opps, my apologies

From: billc@zebra.net (Bill Cleveland)  
Date: Thu, 16 Dec 1999 09:04:25 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "Bob Bruninga" <bruninga@nadm.navy.mil>,  
"Keith Sproul" <ksproul@vger.rutgers.edu>  
Message-ID: <LYR11589-55432-1999.12.16-09.21.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

No problem. Maybe we should stick to using fictional programs for examples.

I'd still like to formally reserve the following version type:

APVxyz = APRS protocol version x.y.z

Who do I need to send this to in order to have it appended to the list on  
Page 20 of the "APRS Protocol Reference" ?

73,  
Bill

----- Original Message -----

From: Keith Sproul <ksproul@vger.rutgers.edu>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Sent: Thursday, December 16, 1999 4:56 AM  
Subject: [aprsspec] Opps, my apologies

> For Bill C. and the Spec SIG...  
>  
> Tuesday I wanted to show that there were differences between APRS  
> platforms, and used a "PALM" as an example.  
>  
> This was supposed to be hypothetical... but I sort of forgot that there is  
> a real v1.0 of a real Palm program, PocketAPRS. I left the impression that  
> this program didn't handle regular APRS messages, and that's not the case.  
>  
> So... please... pardon my goof!  
>  
>  
> Keith  
> Keith Sproul 732 445-3695 Office  
> Student Housing Network Coordinator 732 445-2968 Fax  
> mailto:ksproul@rci.rutgers.edu 732 821-4828 Home  
> http://dorm.rutgers.edu/~ksproul/ WU2Z  
>  
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---

## 115. [aprsspec] Re: Default Null Position

From: Steve Dimse <k4hg@tapr.org>  
Date: Thu, 16 Dec 1999 09:18:08 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55434-1999.12.16-09.33.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 12/16/99 1:08 AM Jim Wagner (wagnerj@proaxis.com) wrote:

>The earlier paragraph about Position Ambiguity really solves that problem.  
>This is, after all, a situation of nearly-infinite ambiguity. Thus, the  
>format  
>  
> " . N" and " . W" (that is, spaces in all position digits)  
>  
>is perfectly logical. And, there is no chance of mis-interpreting it as a  
>position.  
>  
The problem is that this need to be converted to a number for internal

representation. I doubt very many of present implementations could handle this at all. Many products out there are already using 0N 0W as the null, keep in mind that this version represents APRS as it is.

Finally, why 0N 0W is indeed a real point, it is not a very interesting one from an APRS standpoint. It is highly unlikely that anyone running APRS will ever be there, and even if they tried to anchor directly on the point, normal GPS dithering would result in only a tiny percentage of their posits actually being 0.000000N 0.000000E.

Steve K4HG

---

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---

## 116. [aprsspec] INCONSISTENCY Is APRS software or Protocol?

From: Charles Suprin <csuprin@lynx.dac.neu.edu>  
Date: Thu, 16 Dec 1999 10:19:27 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55435-1999.12.16-09.34.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello,

On page 7 the spec states "APRS is a packet communication protocol ..."

However on Page 8 it states "APRS runs on most platforms..."  
Also on page 26 is states "APRS uses the p,h,g and d codes to calculate ..."  
Also on page 26 "The 7-byte DFSShgd Data Extension lets APRS..."  
These two Items suggest that APRS is software.

Perhaps this should be reworded as "APRS clients run on most platforms..."  
and an "APRS client might use the p,h,g and d ...".

I suggest the usage of the term "might use" as there is exists other more complicated propagation models that consider local terrain features. Or it could ignore them completely. For instance does my TD7A do these computations?

Perhaps the standard to include both the software aspects  
and the protocol aspects should more clearly separate out into part 1  
The protocol in gory detail. And Part 2 Things that software might want  
to do with the data acquired from via the APRS protocol.

Also another organization change that would be quite useful for  
discussing the standard would be to add section and subsection  
numbering. This would be useful in the days when an HTML or PDF or  
Postscript version is available and all have different paginations to  
make it easier to discuss which content we are referring to.

After this criticism of the document I feel the need to say that all the  
content I was looking for is contained in this document.

Charles Suprin  
KB1DBX

---

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---

## 117. [aprsspec] Re: Opps, my apologies

From: Steve Dimse <k4hg@tapr.org>  
Date: Thu, 16 Dec 1999 09:26:23 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55436-1999.12.16-09.43.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 12/16/99 11:04 AM Bill Cleveland (billc@zebra.net) wrote:

>No problem. Maybe we should stick to using fictional programs for examples.  
>  
>I'd still like to formally reserve the following version type:  
>  
> APVxyz = APRS protocol version x.y.z  
>  
>Who do I need to send this to in order to have it appended to the list on  
>Page 20 of the "APRS Protocol Reference" ?

>  
I guess I'm not clear on your planned usage of this. These codes are reserved for specific software and hardware implementations of the protocol. While the APRSWG hasn't specifically addressed the mechanics of handing these out, I suspect we will want to wait until someone has a program or device ready for on-air testing, since we have a limited number of available codes.

Steve K4HG

---

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---

## 118. [aprsspec] Re: Default Null Position

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Thu, 16 Dec 1999 18:05:56 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55439-1999.12.16-10.19.25--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55439-1999.12.16-10.19.25--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Thu, 16 Dec 1999 09:18:08 -0600, Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)> wrote:

>On 12/16/99 1:08 AM Jim Wagner ([wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)) wrote:  
>  
>>The earlier paragraph about Position Ambiguity really solves that problem.  
>>This is, after all, a situation of nearly-infinite ambiguity. Thus, the  
>>format  
>>  
>>" . N" and " . W" (that is, spaces in all position digits)  
>>  
>>is perfectly logical. And, there is no chance of mis-interpreting it as a  
>>position.  
>>  
>The problem is that this need to be converted to a number for internal  
>representation. I doubt very many of present implementations could handle  
>this at all.

Clearly any device forwarding a position must handle the following things in some consistent way

07201.7\_W represents longitude to nearest 1/10th of a minute.  
07201.\_\_\_W represents longitude to nearest minute.  
0720\_\_\_.W represents longitude to nearest 10 minutes.  
072\_\_\_..W represents longitude to nearest degree.

where \_ represent the space character. It is clearly wrong to receive a position of 072\_\_\_..W and forward it as 07200.00W, so either the ASCII string must be stored and forwarded or some other means must be used the number of digits used.

>Many products out there are already using 0N 0W as the null,  
>keep in mind that this version represents APRS as it is.

What should the receiving application do with an invalid coordinate that somehow (eg. manually), has been entered into the system.

What should the application do with 9999.99N ? IMHO, this is a much better null coordinate than 0000.00N/00000.00W, which would remove any ambiguity with a real position and a null position.

>Finally, why 0N 0W is indeed a real point, it is not a very interesting  
>one from an APRS standpoint. It is highly unlikely that anyone running  
>APRS will ever be there, and even if they tried to anchor directly on the  
>point, normal GPS dithering would result in only a tiny percentage of  
>their posits actually being 0.000000N 0.000000E.

At the equator one minute would represent one nautical mile in both latitude and longitude. With the full .00 precision, that would be about 19 m, which is comparable to the GPS precision when the SA is turned off :-).

Paul OH3LWR

---

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---

## 119. [aprsspec] Re: Net Cycle and WIDEn-N

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 16 Dec 1999 11:14:26 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-55441-1999.12.16-10.30.19--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Wed, 15 Dec 1999, Jim Wagner wrote:

> In the description of Net Cycle on page 9, it seems to overlook the  
> following unproto path: ... VIA WIDE5-5.  
> To "unsmart" software, this would appear as a 1-digi path and would use the  
> wrong Net Cycle time.

Good point. But I think the wording "number of digipeaters in the unproto path" also covers this for the smart programmer.

Maybe we could insert "number of digipeaters or WIDEn-N hops"....

---

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---

## 120. [aprsspec] Re: Default Null Position

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 16 Dec 1999 11:17:53 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-55442-1999.12.16-10.33.28--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Thu, 16 Dec 1999, Jim Wagner wrote:

> On page 22 of the draft spec, the idea of a "Default Null Position" is  
> offered. It suggests an appropriate format for a station that cannot  
> determine its position as 0000.00N and 00000.00W.  
>  
> Unfortunately, this is a real location on the surface of the earth. While  
> the odds of an APRS station being there is very small, the odds are NOT  
> zero.

But it is only 60 feet square in the middle of the ocean. With selective availability, no station could maintain a 0000000000 posit for more than a few seconds anyway...

The null SPACES idea requires additional (exception) parsing, and is not worth that .0000000001 probability... in my opinion...:-) Bob

---

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## 121. [aprsspec] Re: Data Extensions

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 16 Dec 1999 11:25:13 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-55443-1999.12.16-10.40.49--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Thu, 16 Dec 1999, Jim Wagner wrote:

> On page 24, it is printed:  
>  
> A fixed-length, 7-byte field may follow APRS position data. The field is an  
> APRS Data Extension. The extensions may be one of the following:  
>  
> \* CSE/SPD ....  
> \* DIR/SPD ...  
> \* PHGphgd  
> \* RNGrrrr  
> \* DFSshgd  
> \* Tyy/Cxx  
>

>  
> What I read seems very contradictory and incomplete. In the quoted sentence  
> at the very start of the section, it talks about "following position data".  
> There are no qualifications, or limitations.

Maybe the above list should include the one other possibility, and that is  
that it can contain ..... as well as the examples above followed by  
.....

>  
> Then, a bit later, it just slips in "can be used to represent the wind  
> direction and sustained one-minute wind speed in a Weather Report."  
>  
> Is, this, in fact, the wind direction and speed field indicated in "Weather  
> Report Format - with Lat/Long Position" on page 51? If so, that page seems  
> rather silent on the point.

Yes, this is the same format.

> Something, please something, should be done to reduce these ambiguities!!!

I dont understand the ambiguity? A position report comment field can  
contain lots of stuff. This paragraph was an attempt to identify a number  
of those currently defined and in use.

---

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## 122. [aprsspec] Re: Default Null Position

From: Charles Suprin <csuprin@lynx.dac.neu.edu>  
Date: Thu, 16 Dec 1999 11:38:23 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55448-1999.12.16-11.11.16--lyris.aprsspec#tapr.org@lists.tapr.org>  
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Please note that the purpose of this specification is to document the  
way the system currently works.

I agree that this is a short coming of the system. However it should be  
a shortcoming that is addressed in APRS v2.0. If we wanted to open this  
up to everything that could be better we would be here all day. I have  
things I think should happen.

Now as to bobs comment: Anything worth doing is worth doing right.  
If someone wants to lower a sea anchor and manually enter a position  
into there system of 0.0000000000N 0.000000000E then they should be  
allowed to and the system should work. What happens if there happens to  
be oil at that location? The rig could actually be there.

Also many standards state that there are things a compliant system  
should do versus things the system must do. Perhaps we should include  
this as a should do in 2.0.

Charles

>  
> On Thu, 16 Dec 1999 09:18:08 -0600, Steve Dimse <k4hg@tapr.org> wrote:  
>  
> >On 12/16/99 1:08 AM Jim Wagner (wagnerj@proaxis.com) wrote:  
> >  
> >>The earlier paragraph about Position Ambiguity really solves that problem.  
> >>This is, after all, a situation of nearly-infinite ambiguity. Thus, the  
> >>format  
> >>  
> >>" . N" and " . W" (that is, spaces in all position digits)  
> >>  
> >>is perfectly logical. And, there is no chance of mis-interpreting it as a  
> >>position.  
> >>  
> >>The problem is that this need to be converted to a number for internal  
> >>representation. I doubt very many of present implementations could handle  
> >>this at all.  
>  
> Clearly any device forwarding a position must handle the following  
> things in some consistent way

```

>
> 07201.7_W represents longitude to nearest 1/10th of a minute.
> 07201.___W represents longitude to nearest minute.
> 0720.___W represents longitude to nearest 10 minutes.
> 072.___W represents longitude to nearest degree.
>
> where _ represent the space character. It is clearly wrong to receive
> a position of 072.___W and forward it as 07200.00W, so either the
> ASCII string must be stored and forwarded or some other means must be
> used the number of digits used.
>
> >Many products out there are already using 0N 0W as the null,
> >keep in mind that this version represents APRS as it is.
>
> What should the receiving application do with an invalid coordinate
> that somehow (eg. manually), has been entered into the system.
>
> What should the application do with 9999.99N ? IMHO, this is a much
> better null coordinate than 0000.00N/00000.00W, which would remove any
> ambiguity with a real position and a null position.
>
>
> >Finally, why 0N 0W is indeed a real point, it is not a very interesting
> >one from an APRS standpoint. It is highly unlikely that anyone running
> >APRS will ever be there, and even if they tried to anchor directly on the
> >point, normal GPS dithering would result in only a tiny percentage of
> >their posits actually being 0.000000N 0.000000E.
>
> At the equator one minute would represent one nautical mile in both
> latitude and longitude. With the full .00 precision, that would be
> about 19 m, which is comparable to the GPS precision when the SA is
> turned off :-).
>
> Paul OH3LWR
>
>
> ---
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>
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```

## 123. [aprsspec] Re: Default Null Position

```

From: Steve Dimse <k4hg@tapr.org>
Date: Thu, 16 Dec 1999 10:59:22 -0600
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-55449-1999.12.16-11.15.50--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 12/16/99 10:05 AM Paul Keinanen (keinanen@sci.fi) wrote:

>On Thu, 16 Dec 1999 09:18:08 -0600, Steve Dimse <k4hg@tapr.org> wrote:
>
>>The problem is that this need to be converted to a number for internal
>>representation. I doubt very many of present implementations could handle
>>this at all.
>
>Clearly any device forwarding a position must handle the following
>things in some consistent way
>
>07201.7_W represents longitude to nearest 1/10th of a minute.
>07201.___W represents longitude to nearest minute.
>0720.___W represents longitude to nearest 10 minutes.
>072.___W represents longitude to nearest degree.
>
>where _ represent the space character. It is clearly wrong to receive
>a position of 072.___W and forward it as 07200.00W, so either the
>ASCII string must be stored and forwarded or some other means must be
>used the number of digits used.
>
Well, this has been a MAJOR point of contention between Bob and myself
over the last year. I am completely unconvinced that there is a need for
ambiguity in the first place. What we finally decided after an great deal
of arguing is we would place it into the protocol, but it is up to the

```

individual programmer on if, and how, to handle the ambiguity.

All my software treats 072\_\_\_.W as 72.0000, and will continue to. I do not find any display method yet proposed satisfactory for conveying ambiguity...I do not like stations simply disappearing as you zoom in on a map, and using circles or squares results in a clutter map and is difficult to associate a particular callsign with a zone of ambiguity. Finally, there is no way at all I could handle these on the map.aprs.net system.

>>Many products out there are already using 0N 0W as the null,  
>>keep in mind that this version represents APRS as it is.

>  
>What should the receiving application do with an invalid coordinate  
>that somehow (eg. manually), has been entered into the system.

>  
>What should the application do with 9999.99N ? IMHO, this is a much  
>better null coordinate than 0000.00N/00000.00W, which would remove any  
>ambiguity with a real position and a null position.

>  
This is not an option. It is impossible in the Mic-E algorithm to specify this position.

>  
>>Finally, why 0N 0W is indeed a real point, it is not a very interesting  
>>one from an APRS standpoint. It is highly unlikely that anyone running  
>>APRS will ever be there, and even if they tried to anchor directly on the  
>>point, normal GPS dithering would result in only a tiny percentage of  
>>their posits actually being 0.000000N 0.000000E.

>  
>At the equator one minute would represent one nautical mile in both  
>latitude and longitude. With the full .00 precision, that would be  
>about 19 m, which is comparable to the GPS precision when the SA is  
>turned off :-).

>  
Yes, and SA has not been turned off since the Gulf war for an significant length of time. It is about 350 miles from the nearest land, too far for DGPS. So, in order for this to be a significant problem, you would need a marine mobile APRS station deliberately keeping station within the 20 meter box at 0N 0W and SA being turned off. That's pretty close to my definition of highly unlikely...

Steve K4HG

---

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---

## 124. [aprsspec] Re: Default Null Position

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 16 Dec 1999 13:04:52 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55455-1999.12.16-12.20.29--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Paul,

Yes, there are lots of possible ways to indicate a NULL position. But for the SPEC of what APRS is today, it is 0000/00000. Nothing will change that in APRS version 1.0. That's just the way it is in all current hardware and software...

Sorry...

Bob

On Thu, 16  
Dec 1999, Paul Keinanen wrote:

> On Thu, 16 Dec 1999 09:18:08 -0600, Steve Dimse <k4hg@tapr.org> wrote:  
>  
> >On 12/16/99 1:08 AM Jim Wagner (wagnerj@proaxis.com) wrote:  
> >  
> >>The earlier paragraph about Position Ambiguity really solves that problem.  
> >>This is, after all, a situation of nearly-infinite ambiguity. Thus, the  
> >>format  
> >>  
> >>" . N" and " . W" (that is, spaces in all position digits)

```

> >>
> >>is perfectly logical. And, there is no chance of mis-interpreting it as a
> >>position.
> >>
> >The problem is that this need to be converted to a number for internal
> >representation. I doubt very many of present implementations could handle
> >this at all.
>
> Clearly any device forwarding a position must handle the following
> things in some consistent way
>
> 07201.7_W represents longitude to nearest 1/10th of a minute.
> 07201.___W represents longitude to nearest minute.
> 0720.___W represents longitude to nearest 10 minutes.
> 072.___W represents longitude to nearest degree.
>
> where __ represent the space character. It is clearly wrong to receive
> a position of 072.___W and forward it as 07200.00W, so either the
> ASCII string must be stored and forwarded or some other means must be
> used the number of digits used.
>
> >Many products out there are already using 0N 0W as the null,
> >keep in mind that this version represents APRS as it is.
>
> What should the receiving application do with an invalid coordinate
> that somehow (eg. manually), has been entered into the system.
>
> What should the application do with 9999.99N ? IMHO, this is a much
> better null coordinate than 0000.00N/00000.00W, which would remove any
> ambiguity with a real position and a null position.
>
>
> >Finally, why 0N 0W is indeed a real point, it is not a very interesting
> >one from an APRS standpoint. It is highly unlikely that anyone running
> >APRS will ever be there, and even if they tried to anchor directly on the
> >point, normal GPS dithering would result in only a tiny percentage of
> >their posits actually being 0.000000N 0.000000E.
>
> At the equator one minute would represent one nautical mile in both
> latitude and longitude. With the full .00 precision, that would be
> about 19 m, which is comparable to the GPS precision when the SA is
> turned off :-).
>
> Paul OH3LWR
>
>
> ---
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>
>

```

APRSDos REPLY/COMMENT:

```

Reply mail addr:  wb4apr@amsat.org
US mail address:  115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY:  http://web.usna.navy.mil/~bruninga/dayton.html
See Maryland APRS LIVE:  http://web.usna.navy.mil/~bruninga/aprs.html
See GPS on ANY radio:  http://www.tapr.org/tapr/html/mic-e.html

```

---

```

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```

## 125. [aprsspec] Re: Opps, my apologies

```

From: billc@zebra.net (Bill Cleveland)
Date: Thu, 16 Dec 1999 13:06:52 -0800
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-55462-1999.12.16-13.23.28--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

```

----- Original Message -----
From: Steve Dimse <k4hg@tapr.org>

```

```

> I guess I'm not clear on your planned usage of this. These codes are
> reserved for specific software and hardware implementations of the
> protocol.

```



My planned usage for this is to act as a general indicator of what protocol version is in use by a client. APV101 would indicate APRS protocol ver. 1.0.1 is being used. I still think assigning a specific code to each individual software/hardware implementation isn't as useful as tagging the protocol being used.

If I write a software implementation of APRS and I chose to support V.1.0.0 of the APRS protocol, I could use APV100 to identify my software implementation as being APRS V.1.0.0 compliant.

> While the APRSWG hasn't specifically addressed the mechanics of handing these out, ...

How can you open a protocol to public comment, and not have any plans in place to act on them?

> I suspect we will want to wait until someone has a  
> program or device ready for on-air testing, since we have a limited  
> number of available codes.

What if I start using APV at my site, lets say within the next 2 days?

73.  
Bill

---

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---

## 126. [aprsspec] Mic-E Destination Address Field

From: "Lief Hendrickson" <lhendric@mail.sdsu.edu>  
Date: Thu, 16 Dec 1999 13:17:37  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55464-1999.12.16-13.32.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The following related comments apply to Chapter 10, APRS Protocol Version 1.0. For these comments, LSB is numbered as zero.

1. Page 37. There appears to be inadequate definition in MIC-E Destination Address Field-  
The fifth bit in each of the first 6 bytes of the destination field is not adequately defined. It is shown by the symbol "x" (the 9th bullet on page 37) which we are told is either a 0 or 1. However, there is no definition of where the 0 or 1 come from. We can handle the value of x as being part of the bit pattern for the corresponding letter and then follow the table. However, what is the purpose of the "x" parameter? The condition corresponding to 0 and the condition corresponding to 1 should be specified...unless it's a secret! Is it just a flag to indicate the shifted sequence? If so, why even bother since the P thru Z sequence could convey the same information.

2. page 38. The convention on latitude digit for letters A thru K is not clear-  
The representation on page 37 indicates the latitude digits are the numerical value of the nibble made up of bits 1 thru 4 (shown as "dddd" in the 1st and 2nd bytes, "mmmm" in the 3rd and 4th bytes and "hhhh" in the 5th and 6th bytes). For the letter "A", the nibble is 0001. This is clearly the decimal value 1, not the decimal value 0 shown in the upper table on page 38. For "B", the corresponding nibble is 0010 which is the decimal value 2, not the decimal value 1 shown in the table, etc. for the remaining letters in the A to J sequence. They are all shifted by 1. Possibly the notation "(custom)" in the table indicates it is a look-up table (consisting of a offset-by-one pattern) for the A to J sequence rather than the numerical value of the nibble (which would make more sense!). If so, it should be stated- and one would wonder the reason (and value) for this difference in representation over the more straight-forward direct numerical value of the nibble.

I may have missed some reason for the above. Explanation or corrections of interpretation would be appreciated.

Thanks.  
Lief Hendrickson

---

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## 127. [aprsspec] Shelter Message

From: "Thomas M. Schaefer" <toms@inconnect.com>  
Date: Thu, 16 Dec 1999 13:26:51 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55470-1999.12.16-14.42.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At the DCC 1999, Keith Sproul mentioned that the Shelter data formats are defined, just not implemented. I have searched the spec, but did not see a reference to the message format. If it is not in a current program, I assume it does not go in the spec?

If there is a working format, it would be helpful for on-going development efforts rather than define a new one.

Thanks,

Tom NY4I

-----Original Message-----

From: Bob Bruninga <bruninga@nadn.navy.mil>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Date: Thursday, December 16, 1999 11:05 AM  
Subject: [aprsspec] Re: Default Null Position

>Paul,  
> Yes, there are lots of possible ways to indicate a NULL position. But  
>for the SPEC of what APRS is today, it is 0000/00000. Nothing will  
>change that in APRS version 1.0. That's just the way it is in all current  
>hardware and software....  
>  
>Sorry...  
>  
>Bob  
>  
>  
> On Thu, 16  
>Dec 1999, Paul Keinanen wrote:  
>  
>> On Thu, 16 Dec 1999 09:18:08 -0600, Steve Dimse <k4hg@tapr.org> wrote:  
>>  
>> >On 12/16/99 1:08 AM Jim Wagner (wagnerj@proaxis.com) wrote:  
>> >  
>> >>The earlier paragraph about Position Ambiguity really solves that  
>> problem.  
>> >>This is, after all, a situation of nearly-infinite ambiguity. Thus, the  
>> >>format  
>> >>  
>> >>" . N" and " . W" (that is, spaces in all position digits)  
>> >>  
>> >>is perfectly logical. And, there is no chance of mis-interpreting it as  
>> a  
>> >>position.  
>> >>  
>> >The problem is that this needs to be converted to a number for internal  
>> representation. I doubt very many of present implementations could  
>> handle  
>> >this at all.  
>>  
>> Clearly any device forwarding a position must handle the following  
>> things in some consistent way  
>>  
>> 07201.7\_W represents longitude to nearest 1/10th of a minute.  
>> 07201.\_\_\_W represents longitude to nearest minute.  
>> 0720\_\_.\_\_\_W represents longitude to nearest 10 minutes.  
>> 072\_\_\_\_.W represents longitude to nearest degree.  
>>  
>> where \_ represent the space character. It is clearly wrong to receive  
>> a position of 072\_\_\_\_.W and forward it as 07200.00W, so either the  
>> ASCII string must be stored and forwarded or some other means must be  
>> used the number of digits used.  
>>  
>> >>Many products out there are already using 0N 0W as the null,

```

>> >keep in mind that this version represents APRS as it is.
>>
>> What should the receiving application do with an invalid coordinate
>> that somehow (eg. manually), has been entered into the system.
>>
>> What should the application do with 9999.99N ? IMHO, this is a much
>> better null coordinate than 0000.00N/00000.00W, which would remove any
>> ambiguity with a real position and a null position.
>>
>>
>> >Finally, why 0N 0W is indeed a real point, it is not a very interesting
>> >one from an APRS standpoint. It is highly unlikely that anyone running
>> >APRS will ever be there, and even if they tried to anchor directly on
the
>> >point, normal GPS dithering would result in only a tiny percentage of
>> >their posits actually being 0.000000N 0.000000E.
>>
>> At the equator one minute would represent one nautical mile in both
>> latitude and longitude. With the full .00 precision, that would be
>> about 19 m, which is comparable to the GPS precision when the SA is
>> turned off :-).
>>
>> Paul OH3LWR
>>
>>
>> ---
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>>
>>
>
>APRSdos REPLY/COMMENT:
>
>Reply mail addr: wb4apr@amsat.org
>US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
>See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html
>See Maryland APRS LIVE: http://web.usna.navy.mil/~bruninga/aprs.html
>See GPS on ANY radio: http://www.tapr.org/tapr/html/mic-e.html
>
>
>---
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>

```

---

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## 128. [aprsspec] Re: Shelter Message

```

From: Keith Sproul <ksproul@rci.rutgers.edu>
Date: Thu, 16 Dec 1999 15:36:22 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-55473-1999.12.16-14.57.09--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

They were 'tentively' defined, and the definition was NOT good enough to satisfy even a small group of people, so instead of wasting our time on something that was only partially defined, we left that out for a future version, since the ONLY thing that accepted it was WinAPRS/MacAPRS, and even that was only done as a test and wasn't even close to finished.

There are some major definitions of what NEEDS to be in the data, but other than some examples that sort-of worked, not much else was completed..

I will be looking for people to help on this as time progresses.. This will be done through the official WG, allowing many people to have input..

Keith Sproul

```

>At the DCC 1999, Keith Sproul mentioned that the Shelter data formats are
>defined, just not implemented. I have searched the spec, but did not see a
>reference to the message format. If it is not in a current program, I assume

```

>it does not go in the spec?  
>  
>If there is a working format, it would be helpful for on-going development  
>efforts rather than define a new one.  
>  
>Thanks,  
>  
>Tom NY4I

|                                       |                         |                |
|---------------------------------------|-------------------------|----------------|
| Keith Sproul                          | ksproul@rci.rutgers.edu | WU2Z           |
| Student Housing Network Coordinator   |                         | 732 445-3695 W |
| Rutgers University Computing Services |                         | 732 821-4828 H |

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---

## 129. [aprsspec] Re: Opps, my apologies

From: Ian Wade <[ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)>  
Date: Thu, 16 Dec 1999 20:55:23 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55476-1999.12.16-15.13.53--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55476-1999.12.16-15.13.53--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR11659-55462-1999.12.16-13.23.28--ian#dowrmain.demon.co.uk@lists.tapr.org](mailto:LYR11659-55462-1999.12.16-13.23.28--ian#dowrmain.demon.co.uk@lists.tapr.org)>, Bill Cleveland <[billc@zebra.net](mailto:billc@zebra.net)> writes

>If I write a software implementation of APRS and I chose to support V.1.0.0  
>of the APRS protocol, I could use APV100 to identify my software  
>implementation as being APRS V.1.0.0 compliant.  
>

In principle, yes. If your software is really in *\*full\** compliance with  
1.0.0 then you could conceive of using something like APV100.

But in practice it is very *\*unlikely\** that individual software or firmware  
implementations will ever be in *\*full\** compliance with the spec (hardware  
restrictions may even constrain the implementation to a subset of the spec).  
The current authors may prove me wrong, but I don't think any of their  
implementations *\*fully\** comply today. In that case they could not use  
APV100, so what would they use in its place?

That is why the current scheme of software version number is more  
meaningful, and potentially helpful with debugging when things go wrong,  
especially when looking at rogue packets many thousands of miles away!

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

--  
+-----+  
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |  
| email: [g3nrw@arrrl.net](mailto:g3nrw@arrrl.net) |  
| |  
| APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/Faprswg.html> |  
+-----+

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---

## 130. [aprsspec] Re: Default Null Position

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Thu, 16 Dec 1999 16:14:20 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55477-1999.12.16-15.27.31--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55477-1999.12.16-15.27.31--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

This conversation reminds me of high school chemistry class:

"But teacher, my gram scale{that I just dropped on the floor}  
does say 5.89746258304620398462gm so it still must be right  
to the 20th place"

Knowing the level of precision (or ambiguity) was a key part in  
getting a good grade in my chemistry class. In navigation it  
can be the difference between life and death.

Steve Dimse wrote:

```
> On 12/16/99 10:05 AM Paul Keinanen (keinanen@sci.fi) wrote:
>
>
> >Clearly any device forwarding a position must handle the following
> >things in some consistent way
> >
> >07201.7_W represents longitude to nearest 1/10th of a minute.
> >07201.___W represents longitude to nearest minute.
> >0720.___W represents longitude to nearest 10 minutes.
> >072____W represents longitude to nearest degree.
> >
> >where _ represent the space character. It is clearly wrong to receive
> >a position of 072____W and forward it as 07200.00W, so either the
> >ASCII string must be stored and forwarded or some other means must be
> >used the number of digits used.
```

EXACTLY. You have to represent the degree of precision that the sensor reports. And you MUST NOT increase its accuracy as clearly this leads to increasingly inaccurate results farther down the line

```
> Well, this has been a MAJOR point of contention between Bob and myself
> over the last year. I am completely unconvinced that there is a need for
> ambiguity in the first place.
```

Some navigation sensors are better than others, and give a more precise result. Such as GPS vs. DGPS vs. Loran vs. dead reckoning (and more). So quite clearly, as each of these has varying levels of "preciseness" there exists the need for a ambiguity reporting in any system that can use these. This is navigation 101 stuff people. Bob knows what he is talking about.

Also, getting into something a little bit more obscure (but equally important) KNOWING the level of ambiguity is a KEY factor in doing any kind of sensor fusion (such as Kamin filtering).

```
> What we finally decided after an great deal
> of arguing is we would place it into the protocol, but it is up to the
> individual programmer on if, and how, to handle the ambiguity.
```

At a end user display terminal, with ABSOLUTELY NO CHANCE of passing the munged data on, then this is fine. But if the station, or application can pass this data on, it must retain the level of precision (ambiguity) of the data. To actually change the data by removing the level of precision should be one of the "thou shall nots" of the APRS SPEC.

```
> All my software treats 072____W as 72.0000, and will continue to.
```

As long as your not passing this on to another station, then this is fine. I'd strongly suggest a visible warning in your program that indicates you are munging the data in such a manner. I'm not sure what you are developing, but if it is ever used for navigation, and a accident results from this (undisclosed) munging of the data, there could be ramifications.

But the APRS-WG must not allow certifications of programs that increase the level of precision and \*then\* pass the data on to another station at a reduced level of ambiguity (Such as passing on 072\_\_\_\_W as 72.0000). This is completely unacceptable in any type of navigation or avl system.

-Jeff

P.S.

FYI (regarding coordinates 0.00, 0.00):

```
> Yes, and SA has not been turned off since the Gulf war for an significant
> length of time. It is about 350 miles from the nearest land, too far for
> DGPS.
```

There are more ways for DGPS then just the coast guard long wave stations. The OmniStar ASAT satellite does cover this area. See:

<http://www.omnistar.com/region.html>

---

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## 131. [aprsspec] Re: Opps, my apologies

From: Steve Dimse <k4hg@tapr.org>  
Date: Thu, 16 Dec 1999 15:12:42 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55479-1999.12.16-15.31.02--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 12/16/99 3:06 PM Bill Cleveland (billc@zebra.net) wrote:

>----- Original Message -----

>From: Steve Dimse <k4hg@tapr.org>

>

>> I guess I'm not clear on your planned usage of this. These codes are  
>> reserved for specific software and hardware implementations of the  
>> protocol.

>

>My planned usage for this is to act as a general indicator of what protocol  
>version is in use by a client. APV101 would indicate APRS protocol ver.  
>1.0.1 is being used. I still think assigning a specific code to each  
>individual software/hardware implementation isn't as useful as tagging the  
>protocol being used.

>

>If I write a software implementation of APRS and I chose to support V.1.0.0  
>of the APRS protocol, I could use APV100 to identify my software  
>implementation as being APRS V.1.0.0 compliant.

>

This is not what the field is intended for. You have no idea how  
frustrating it is to have someone send you a message saying "the packet  
from WZ9ZZZ isn't decoded by your program", and then to go dig out a  
packet from that station, see it is incorrectly formed, and have no idea  
which program sent it.

This is why the author/manufacturer field is there. It is very much  
appreciated by those of us that need to troubleshoot the system, and  
needs to remain in place.

And once again, Version 1.0 of the protocol documents what is in place  
today...

>> While the APRSWG hasn't specifically addressed the mechanics of handing  
>these out, ...

>

>How can you open a protocol to public comment, and not have any plans in  
>place to act on them?

>

This isn't a difficult question, we are handling much tougher ones first.  
My proposal is to have a new author submit a request, and unless it is in  
conflict changes. When any new version of the protocol doc is produced  
for another reason, the changes are included. In other words, no need to  
re-issue the protocol every time a new code is assigned. Just my opinion,  
what the group decides to do may differ...

>> I suspect we will want to wait until someone has a  
>> program or device ready for on-air testing, since we have a limited  
>> number of available codes.

>

>What if I start using APV at my site, lets say within the next 2 days?

>

If you have a piece of software read to go on the air in two days, let us  
know the name of the program and a little something about it. This would  
cause us to bump the issue up in priority and settle the assignment issue  
now. Otherwise, it will wait for tougher things to be settled first, or  
for someone else to need an ID in the short term.

Or perhaps the question referred to civil disobedience, so-to-speak, of  
not getting a code issued first? The APRS protocol is a voluntary  
document. All the members of the APRS WG are committed to working with  
new authors to make sure their software is compatible with what we have  
in use already. If you want to ignore the resources that are offered you,  
there are no repercussions contemplated, though it would be a shame...

Steve K4HG

---

### 132. [aprsspec] Re: Opps, my apologies

From: Charles Suprin <[csuprin@lynx.dac.neu.edu](mailto:csuprin@lynx.dac.neu.edu)>  
Date: Thu, 16 Dec 1999 16:19:32 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-55481-1999.12.16-15.34.33--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55481-1999.12.16-15.34.33--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Ian,

I mention this in one of my other posts. but it may have gotten lost.

It is possible to write the spec in such a way that many of the features can be unimplemented and a product could be compliant. For instance if a particular implementation of the standard only transmitted one type of packet then that type of packet must be one of the types listed in the document. However an implementation should support at minimum the direct message packets and a location type packet.

In trying to keep this away from a Dr. Spock type document, some of the technical administrivia is failing to be addressed.

The standard should be written such that every represented APRS implementation is "APRS 1.0.0 Compliant".

Charles

```
>
> In article <LYR11659-55462-1999.12.16-13.23.28--ian#downmain.demon.co.uk@lis
> ts.tapr.org>, Bill Cleveland <billc@zebra.net> writes
>
>
> >If I write a software implementation of APRS and I chose to support V.1.0.0
> >of the APRS protocol, I could use APV100 to identify my software
> >implementation as being APRS V.1.0.0 compliant.
> >
>
> In principle, yes. If your software is really in *full* compliance with
> 1.0.0 then you could conceive of using something like APV100.
>
> But in practice it is very *unlikely* that individual software or firmware
> implementations will ever be in *full* compliance with the spec (hardware
> restrictions may even constrain the implementation to a subset of the spec).
> The current authors may prove me wrong, but I don't think any of their
> implementations *fully* comply today. In that case they could not use
> APV100, so what would they use in its place?
>
> That is why the current scheme of software version number is more
> meaningful, and potentially helpful with debugging when things go wrong,
> especially when looking at rogue packets many thousands of miles away!
>
> 73
> Ian, G3NRW
> Technical Editor, APRS Protocol Specification
>
> --
> +-----+
> | APRS on 144.800 [I0915X] ~55km/35 miles NNW of London |
> | email: g3nrw@arrl.net |
> | |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
> +-----+
>
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---

### 133. [aprsspec] Conflict with WIDEn-N & Third Party Digipeating

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 16 Dec 1999 23:51:36 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55585-1999.12.17-01.06.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello -

I have just noticed what appears to be an oversight concerning Third Party Digipeating packet reformulation and the operation of WIDEn-N digis.

On page 67, last paragraph, it is noted:

Any digipeaters following the callsign of the station from which the packet was heard are termed "unused". These unused digipeaters are stripped out when building a Third-Party Header.

When a packet is received direct from a WIDEn-N digi, there is no "\*" to signify from which digi it has been heard. The only rule I can think of is to assume the LAST digi in a WIDEn-N chain if there is no subsequent digi marked with an asterisk. In our area (Oregon south of Portland), we get lots of packets from British Columbia with no asterisk!

Am I wrong or is there a better way?

Thanks,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of  
ka7ehk@yahoo.com                        Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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---

## 134. [aprsspec] Default Null Position

From: Paul Keinanen <keinanen@sci.fi>  
Date: Fri, 17 Dec 1999 10:22:43 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55592-1999.12.17-02.36.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 16 Dec 1999 10:59:22 -0600, Steve Dimse <k4hg@tapr.org> wrote:

>On 12/16/99 10:05 AM Paul Keinanen (keinanen@sci.fi) wrote:

>>What should the receiving application do with an invalid coordinate  
>>that somehow (eg. manually), has been entered into the system.

When APRS1.0 specification is not intended to be a RFC style document, some inexperienced programs might not think about the possibility of illegal values in some data fields, thus I think it would be a good thing to say in the document what to do in that situation e.g. crash the program (hopefully not) or handle it as a default null position (whatever that is now or in the future).

>>What should the application do with 9999.99N ? IMHO, this is a much  
>>better null coordinate than 0000.00N/00000.00W, which would remove any  
>>ambiguity with a real position and a null position.  
>>  
>This is not an option. It is impossible in the Mic-E algorithm to specify  
>this position.

I must have missed something, since my interpretation is that the latitude is transmitted in the destination address as six BCD digits, thus, I do not see a problem of representing 9999.99N or 9959.99N. In fact in the third BCD digit (tens of minutes) the MSB is always 0, since that digit can only vary from 0 to 5, thus three bits would be sufficient :-).



It would have been a simple thing to encode the uncertainty in the less significant digits by using an invalid BCD digit e.g. the binary combination 1010 (ten) to indicate unavailable data, but unfortunately no-one seem to have thought about this when the Mic-E specification was initially designed.

>Yes, and SA has not been turned off since the Gulf war for an significant  
>length of time.

Is the US going to keep the SA on forever in the future ?

And besides there are other existing and planned satnav systems that are not using SA even if the US keeps it on the GPS system.

Paul OH3LWR

---

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### 135. [aprsspec] Re: Default Null Position

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Fri, 17 Dec 1999 04:16:45 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55595-1999.12.17-04.32.07--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55595-1999.12.17-04.32.07--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

The default null position is of no consequence in Version 1.0.  
You will have to expand your algorithm a bit to note moving objects passing through the point. Otherwise mask the object.

In version 2.0 it can be done correctly, as I would hope it would be a binary protocol, rather than a character protocol.

There have been zero (null) Hams going to that point and operating Ham radio since APRS day 1, and none are projected. Why should we care now? Sure it could be designed better, and should, but not in this version: It's so small an issue that yawning is appropriate...

---

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### 136. [aprsspec] Re: Conflict with WIDEn-N & Third Party Digipeating

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 17 Dec 1999 08:37:23 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55610-1999.12.17-07.52.58--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55610-1999.12.17-07.52.58--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Thu, 16 Dec 1999, Jim Wagner wrote:

> I have just noticed what appears to be an oversight concerning Third Party  
> Digipeating packet reformulation and the operation of WIDEn-N digis.  
>  
> On page 67, last paragraph, it is noted:  
>  
> Any digipeaters following the callsign of the station from which the packet  
> was heard are termed "unused". These unused digipeaters are stripped out  
> when building a Third-Party Header.  
>  
> When a packet is received direct from a WIDEn-N digi, there is no "\*" to  
> signify from which digi it has been heard.

Good point Jim. You are correct since WIDEn-N propagates with the has-been-digipeated bit NOT set until it gets to 0. Hummh....

OK, but since the only call in that stream that will show a "\*" it the one prior to the WIDEn-N, then it will usually, if not always, be the originating digipeater. And that originating digipeater is probably the most useful piece of information available to identify where the packet came from. So far, no one has used any of this path information.

My first reaction is to leave it be. Or at least until we have an idea of what good it would do to work up a work-around..... But you have identified a small "quirk" that should not be overlooked in the future if we do use this path info...

Bob

---

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---

### 137. [aprsspec] Re: Default Null Position

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 17 Dec 1999 08:54:39 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55618-1999.12.17-08.10.12--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55618-1999.12.17-08.10.12--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 17 Dec 1999, Paul Keinanen wrote:

> It would have been a simple thing to encode the uncertainty in the  
> less significant digits by using an invalid BCD digit e.g. the binary  
> combination 1010 (ten) to indicate unavailable data, but unfortunately  
> no-one seem to have thought about this when the Mic-E specification  
> was initially designed.

That is EXACTLY what we did. The SPACE character... in conventional APRS formatted LAT/LONGS and a shifted ALPHABET in the Mic-E...

Bob

---

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---

### 138. [aprsspec] Re: Conflict with WIDEn-N & Third Party Digipeating

From: Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Fri, 17 Dec 1999 15:43:13 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55639-1999.12.17-10.37.40--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55639-1999.12.17-10.37.40--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR13460-55610-1999.12.17-07.52.58--roger#peaksys.co.uk@list.s.tapr.org](mailto:LYR13460-55610-1999.12.17-07.52.58--roger#peaksys.co.uk@list.s.tapr.org)>, Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes

>On Thu, 16 Dec 1999, Jim Wagner wrote:

>

>> I have just noticed what appears to be an oversight concerning Third Party  
>> Digipeating packet reformulation and the operation of WIDEn-N digis.

>>

>> On page 67, last paragraph, it is noted:

>>

>> Any digipeaters following the call sign of the station from which the packet  
>> was heard are termed "unused". These unused digipeaters are stripped out  
>> when building a Third-Party Header.

>>

>> When a packet is received direct from a WIDEn-N digi, there is no "\*" to  
>> signify from which digi it has been heard.

>

>Good point Jim. You are correct since WIDEn-N propagates with the  
>has-been-digipeated bit NOT set until it gets to 0. Hummh...

If you assume that WIDEn-n has been used if 'n' is less than 'm', the only situation in which you will be wrong is if someone originates a frame with something like WIDE7-5.

--

Roger Barker, G4IDE [roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)  
Boston, UK <http://www.packetradio.org.uk>

---

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---

### 139. [aprsspec] Re: Conflict with WIDEn-N & Third Party Digipeating

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>  
Date: Fri, 17 Dec 1999 12:32:39 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55677-1999.12.17-14.47.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 17 Dec 1999, Bob Bruninga wrote:

> On Thu, 16 Dec 1999, Jim Wagner wrote:  
>  
> > When a packet is received direct from a WIDEn-N digi, there is no "\*" to  
> > signify from which digi it has been heard.  
>  
> Good point Jim. You are correct since WIDEn-N propagates with the  
> has-been-digipeated bit NOT set until it gets to 0. Hummh....

This (no asterisk) should only occur when the originating station is within direct reach of a WIDEn-N digi, and so doesn't need a RELAY or other station before the WIDEn-N in the path, correct? Then the only time you'd see ANY asterisk is when you get to the last digi.

If there's a RELAY or other digi call before the WIDEn-N, then the asterisk would appear by that station's callsign until you get to the last WIDEn-N digi, correct?

Just making sure I understand.

Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
Senior Methods Engineer/SysAdmin  
"Lotto: A tax on people who are bad at math." -- unknown  
"Windows: Microsoft's tax on computer illiterates." -- WE7U

---

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---

## 140. [aprsspec] Re: Conflict with WIDEn-N & Third Party Digipeating

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 17 Dec 1999 16:14:05 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55680-1999.12.17-15.29.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 17 Dec 1999, Curt Mills, WE7U wrote:

> On Fri, 17 Dec 1999, Bob Bruninga wrote:  
>  
> > On Thu, 16 Dec 1999, Jim Wagner wrote:  
> >  
> > > When a packet is received direct from a WIDEn-N digi, there is no "\*" to  
> > > signify from which digi it has been heard.  
> >  
> > Good point Jim. You are correct since WIDEn-N propagates with the  
> > has-been-digipeated bit NOT set until it gets to 0. Hummh....  
>  
> This (no asterisk) should only occur when the originating station is within  
> direct reach of a WIDEn-N digi, and so doesn't need a RELAY or other station  
> before the WIDEn-N in the path, correct? Then the only time you'd see ANY  
> asterisk is when you get to the last digi.  
>  
> If there's a RELAY or other digi call before the WIDEn-N, then the asterisk  
> would appear by that station's callsign until you get to the last WIDEn-N  
> digi, correct?

I dont think so. Some digi will always hear the RELAY first, so it will (and must) always be digipeated by that call first. Thus, it will always have the RELAY\*,WIDEn-N or callsing substituted DIGI\*,WIDEn-N.... Unless you hear the originator direct. then you will see one packet with no stars....

Bob

---

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## 141. [aprsspec] Position Ambiguity and Mr. Spock

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 17 Dec 1999 18:09:36 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-55687-1999.12.17-17.22.04--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Jeff King wrote:

- > Some navigation sensors are better than others, and give a more precise
- > result. Such as GPS vs. DGPS vs. Loran vs. dead reckoning (and more). So
- > quite clearly, as each of these has varying levels of "preciseness" there
- > exists the need for a ambiguity reporting in any system that can use these.
- > This is navigation 101 stuff people. Bob knows what he is talking about.
- >
- > Also, getting into something a little bit more obscure (but equally important)
- > KNOWING the level of ambiguity is a KEY factor in doing any kind
- > of sensor fusion (such as Kamin filtering).

Actually, this is not at all obscure, now that I think of it. One excellent use of APRS is for coordinated automated direction finding. That is, both mobiles and bases can DF a transmitter, and share their bearing, location and signal strength. Since this data is being shared, it is CRITICAL that each program not put there own spin on it.

A particular yagi has a different degree of precision than a doppler. A base station has a different degree of precision than a mobile (maybe the base station used SA watch to survey there location?), or maybe the mobile doesn't even has a GPS, and is just entering street coordinates of there latest fix. And what about the bearing tools? Are they guessing it by eye or are they using a fluxgate compass with +- %5 accuracy?

Since all the data can be shared with other stations in coming up with a DF fix solution, it is important that the level of ambiguity be shared. For any certified APRS application, it is critical that the particular author does not have free rein to munge the data as they see fit.

-Jeff

>

---

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---

## 142. [aprsspec] Ommission: Position ambiguity munging rules

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 17 Dec 1999 18:14:58 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-55688-1999.12.17-17.27.19--lyris.aprsspec#tapir.org@lists.tapir.org>  
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It is claimed the WG agreed to allow the authors to munge position ambiguity any way they see fit. Since their public silence on this issue seems not impugn this, can we assume this is true? I cannot find any position ambiguity munging rules in the present APRS-SPEC document.

These munging rules need to be in the document if the statement below is true, and most certainly need to be part of the certification process.

-Jeff

- > >07201.7\_W represents longitude to nearest 1/10th of a minute.
- > >07201.\_\_\_W represents longitude to nearest minute.
- > >0720.\_\_\_W represents longitude to nearest 10 minutes.
- > >072\_\_.\_\_\_W represents longitude to nearest degree.
- > >
- > >where \_\_ represent the space character. It is clearly wrong to receive
- > >a position of 072\_\_.\_\_\_W and forward it as 07200.00W, so either the
- > >ASCII string must be stored and forwarded or some other means must be
- > >used the number of digits used.
- > >
- > > Well, this has been a MAJOR point of contention between Bob and myself

```

> over the last year. I am completely unconvinced that there is a need for
> ambiguity in the first place. What we finally decided after an great deal
> of arguing is we would place it into the protocol, but it is up to the
> individual programmer on if, and how, to handle the ambiguity.

>
>
> All my software treats 072___.W as 72.0000, and will continue to. I do
> not find any display method yet proposed satisfactory for conveying
> ambiguity...I do not like stations simply disappearing as you zoom in on
> a map, and using circles or squares results in a clutter map and is
> difficult to associate a particular callsign with a zone of ambiguity.
> Finally, there is no way at all I could handle these on the map.aprs.net
> system.
>
> >>Many products out there are already using 0N 0W as the null,
> >>keep in mind that this version represents APRS as it is.
> >
> >What should the receiving application do with an invalid coordinate
> >that somehow (eg. manually), has been entered into the system.
> >
> >What should the application do with 9999.99N ? IMHO, this is a much
> >better null coordinate than 0000.00N/00000.00W, which would remove any
> >ambiguity with a real position and a null position.
> >
> This is not an option. It is impossible in the Mic-E algorithm to specify
> this position.
>
> >
> >>Finally, why 0N 0W is indeed a real point, it is not a very interesting
> >>one from an APRS standpoint. It is highly unlikely that anyone running
> >>APRS will ever be there, and even if they tried to anchor directly on the
> >>point, normal GPS dithering would result in only a tiny percentage of
> >>their posits actually being 0.000000N 0.000000E.
> >
> >At the equator one minute would represent one nautical mile in both
> >latitude and longitude. With the full .00 precision, that would be
> >about 19 m, which is comparable to the GPS precision when the SA is
> >turned off :-).
> >
> Yes, and SA has not been turned off since the Gulf war for an significant
> length of time. It is about 350 miles from the nearest land, too far for
> DGPS. So, in order for this to be a significant problem, you would need a
> marine mobile APRS station deliberately keeping station within the 20
> meter box at 0N 0W and SA being turned off. That's pretty close to my
> definition of highly unlikely...
>
> Steve K4HG
>
> ---
> You are currently subscribed to aprsspec as: jeff@aerodata.net
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

```

```

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```

## 143. [aprsspec] Parsing of Third Party Digipeated messages

```

From: Jim Wagner <wagnerj@proaxis.com>
Date: Fri, 17 Dec 1999 19:56:20 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-55701-1999.12.17-21.11.28--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

Hello group

The description on pages 67, 68, and 69 do a good job of describing how a tunneled message is parsed at the gateways. But, it says nothing about how it should be parsed at the receiving station.

When I look at the rough draft, it does just the opposite, describing how it should be parsed at the receiving end but not at the gateway.

Shouldn't the standard have both?? Its not obvious to me that the gateway spec is a sufficient description to determine what to do at the receive

point.

Thanks

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 144. [aprsspec] More on Conflict with WIDEn-N & Third Party Digipeating

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Fri, 17 Dec 1999 19:56:38 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55702-1999.12.17-21.11.56--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55702-1999.12.17-21.11.56--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Dec 16, I posted a note about possible problems with Third Party Digipeating and WIDEn-N digipeaters.

Here are two use useful examples. The first is pretty normal and leaves little doubt in my mind what the "local" digi is. The second shows exactly what I was concerned about.

VE7DIE>APW240,N7IFJ-10\*,WIDE5:}VE6DJJ>APW228,TCPIP,VE7DIE\*:=5100.98N/11359.23W\_P  
HG3230/WinAPRS 2.2.8 -ABCANCALGARY -228-<530>

N7RIG-4>APRX44,WIDE5-2:}N7RIG-4>APRX44,WIDE5-4/V:}N7RIG-2>APRZIP,ZDIGI:>090209z  
Richard Seattle Wa. 72155.1222@compuserve.com

Can someone, anyone, tell me whether the second was heard direct or whether it was heard via WIDE5-2? If the packet was properly addressed (initially to WIDE5-5), then it was probably heard via WIDE5-2. But, I rather doubt it in this case because many, if not most, of the WIDEn-N digis between the originating area and the authors location can be heard directly at the author's QTH.

So, what is one to do????

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 145. [aprsspec] Parsing Third Party Digipeated packets

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Fri, 17 Dec 1999 22:47:15 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55725-1999.12.18-00.02.28--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55725-1999.12.18-00.02.28--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello, group...

In the absence of a formal description for parsing received Third Party packets, I have been trying to follow the description in the rough draft of the APRS protocol spec. I've run into a problem with the following packet:

```
K7IP-2>APS199,KSEA*,WIDE3:}KH2Z>APS199,TCPIP,K7IP-2*::SECTIG :etxt
kh2z@arrl.net KH2*{951
```

The rough draft says: "To show that it has been carried by another station, the call of that station is extracted from the as-received header and inserted as a pseudo digi in the digi path."

Lets see, when you do that with the previous packet (and trim the unused part of the local digi path), you get:

```
K7IP-2>APS199,KSEA*,WIDE3:}KH2Z>APS199,TCPIP,K7IP-2,K7IP-2,KSEA*::SECTIG
:etxt kh2z@arrl.net KH2*{951
```

Clearly, there is an error. There are two successive instances of the same call. Any of the following might be true:

1. The packet was incorrectly parsed at the gateway
2. The rough draft algorithm is incorrect
3. Some other error

Can someone illuminate?

In the absence of a formal receive decoding algorithm description in the protocol, this kind of stuff is going to continue being a question.

Thanks,

Jim Wagner  
Oregon Research Electronics

```
-----
wagnerj@proaxis.com      Tangent, Oregon 97389
KA7EHK@KC7KFE.OR.USA.NOAM near Corvallis OR, home of
ka7ehk@yahoo.com         Oregon State University
-----
```

A computer without Windows is like a cake without mustard. - anonymous

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## 146. [aprsspec] Re: Parsing Third Party Digipeated packets

```
From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Fri, 17 Dec 1999 22:01:50 -0800
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-55727-1999.12.18-00.17.04--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

- 1) you can not reconstruct the original packet path from 3rd party packets
- 2) the pseudo header in your example tells you that [1] KH2Z originated the message, [2] using APRS+SA, [3] heard via TCPIP, and [4] gated by K7IP-2.
- 3) The local header, K7IP-2>APS199,KSEA\*,WIDE3 only tells you the packet back to the IGate K7IP-2. Including this path with the header in the 3rd packet is wrong, and meaningless.
- 4) 3rd party format, as transmitted by an IGate, does not tell you how the original packet got into the Internet data stream, only that KH2Z was the originating station.
- 5) sending messages back is transparent. You only need to be assured that your signal gets back to your local IGate.

Brent KH2Z

```
> Hello, group...
>
> In the absence of a formal description for parsing received Third Party
> packets, I have been trying to follow the description in the rough draft
> of
> the APRS protocol spec. I've run into a problem with the following packet:
>
> K7IP-2>APS199,KSEA*,WIDE3:}KH2Z>APS199,TCPIP,K7IP-2*::SECTIG :etxt
> kh2z@arrl.net KH2*{951
>
> The rough draft says: "To show that it has been carried by another
> station,
> the call of that station is extracted from the as-received header and
> inserted as a pseudo digi in the digi path."
```

>  
> Lets see, when you do that with the previous packet (and trim the unused  
> part of the local digi path), you get:  
>  
> K7IP-2>APS199,KSEA\*,WIDE3:}KH2Z>APS199,TCPIP,K7IP-2,K7IP-2,KSEA\*::SECTIG  
> :etxt kh2z@arrl.net KH2\*{951  
>  
> Clearly, there is an error. There are two successive instances of the same  
> call. Any of the following might be true:  
>  
> 1. The packet was incorrectly parsed at the gateway  
> 2. The rough draft algorithm is incorrect  
> 3. Some other error  
>  
> Can someone illuminate?  
>  
> In the absence of a formal receive decoding algorithm description in the  
> protocol, this kind of stuff is going to continue being a question.  
>  
> Thanks,  
>  
> Jim Wagner  
> Oregon Research Electronics  
> -----  
> wagnerj@proaxis.com                      Tangent, Oregon 97389  
> KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of  
> ka7ehk@yahoo.com                        Oregon State University  
> -----  
> A computer without Windows is like a cake without mustard. - anonymous  
>  
>  
>  
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## 147. [aprsspec] Re: More on Conflict with WIDEn-N & Third Party Digipeating

From: Roger Barker <roger@peaksys.co.uk>  
Date: Sat, 18 Dec 1999 09:45:13 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tappr.org>  
Message-ID: <LYR11589-55762-1999.12.18-04.02.12--lyris.aprsspec#tappr.org@lists.tappr.org>  
Rendered body type: text/plain

In article <LYR13460-55702-1999.12.17-21.11.56--roger#peaksys.co.uk@list  
s.tappr.org>, Jim Wagner <wagnerj@proaxis.com> writes  
>On Dec 16, I posted a note about possible problems with Third Party  
>Digipeating and WIDEn-N digipeaters.  
>  
>Here are two use useful examples. The first is pretty normal and leaves  
>little doubt in my mind what the "local" digi is. The second shows exactly  
>what I was concerned about.  
>  
>VE7DIE>APW240,N7IFJ-10\*,WIDE5:}VE6DJJ>APW228,TCPIP,VE7DIE\*:=5100.98N/11359.23W\_  
>P  
>HG3230/WinAPRS 2.2.8 -ABCANCALGARY -228-<530>

If that is off air, and the TNC you are using outputs decoded frame  
headers in "TNC2" format, i.e. the '\*' is put against the last digi with  
the 'H' bit set (equivalent to putting it against the digi you heard it  
from), then it must have originated as:-

VE7DIE>APW240,N7IFJ-10,WIDE5:

And the WIDE5 would appear to me to be redundant.

>N7RIG-4>APRX44,WIDE5-2:}N7RIG-4>APRX44,WIDE5-4/V:}N7RIG-2>APRZIP,ZDIGI:>090209z  
>Richard Seattle Wa. 72155.1222@compuserve.com  
>  
>Can someone, anyone, tell me whether the second was heard direct or whether  
>it was heard via WIDE5-2? If the packet was properly addressed (initially  
>to WIDE5-5), then it was probably heard via WIDE5-2.



If the packet was properly addressed (started off as WIDE5-5) then it was \*definitely\* heard from WIDE5-2.

> But, I rather doubt it  
> in this case because many, if not most, of the WIDEn-N digis between the  
> originating area and the authors location can be heard directly at the  
> author's QTH.  
>  
> So, what is one to do????

I would say:-

(a) Educate the users in how WIDEn-n should be used.  
(b) Assume that it has been used if the second 'n' is less than the first.

Possibly off topic, but just to throw in another slight complication, the spec describes only two different formats of decoded frame headers - TNC2 and PK-232 (which shows what a sheltered life you folks over there lead! ;-). There are others! If your first example had come from a system using BPQ host mode (very popular in the UK), then it would have to be interpreted as having been heard via a used up WIDE5-5, because the '\*' in BPQ decoded frame headers simply indicates that the address 'H' bit is set, so a frame header that has gone through three digis would be decoded as:-

G4IDE>APRS,DIGI1\*,DIGI2\*,DIGI3\*,DIGI4,etc...

Finally, a question - when WIDEn-n counts down to an SSID of '0', should the digi that outputs the frame with WIDE5(-0) set the 'H' bit? I think it should, but I also don't think that all implementations of WIDEn-n do. (Same applies to TRACEn-n.) So, should WIDE5, or WIDE5\*, or both, be regarded as a used up WIDE5-5?

--  
Roger Barker, G4IDE roger@peaksys.co.uk  
Boston, UK http://www.packetradio.org.uk

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## 148. [aprsspec] DF Quality/Ambiguity Sectors?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Dec 1999 10:01:58 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55781-1999.12.18-09.17.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 17 Dec 1999, Jeff King wrote:

> > Some navigation sensors are better than others, and give a more precise  
> > result. Such as GPS vs. DGPS vs. Loran vs. dead reckoning (and more). So  
> > quite clearly, as each of these has varying levels of "preciseness" there  
> > exists the need for a ambiguity reporting in any system that can use these.  
> > This is navigation 101 stuff people. Bob knows what he is talking about.  
>  
> Actually, this is not at all obscure, now that I think of it. One excellent  
> use of APRS is for coordinated automated direction finding. That is,  
> both mobiles and bases can DF a transmitter, and share their bearing,  
> location and signal strength. Since this data is being shared, it is  
> CRITICAL that each program not put there own spin on it.

Yep, thats why I included the Quality factor in the DF bearing info. A quality factor of 8 implies a very narrow accuracy, where as a quality factor of 4 might mean a 45 degree precision, and a quality of 1 might mean +/- 90 deg. Actually, the graphics in APRSdos did not make it easy for me to translate these into ambiguity sectors, but that was the intent... Hummh... Maybe for the future, we should equate these DF quality factors in to specific ambiguity wedges?

Bob

---  
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## 149. [aprsspec] Re: More on Conflict with WIDEn-N & Third Party Digipeating

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Dec 1999 10:24:43 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-55783-1999.12.18-09.40.32--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Fri, 17 Dec 1999, Jim Wagner wrote:

```
> VE7DIE>APW240,N7IFJ-10*,WIDE5:}VE6DJJ>APW228,TCPIP,VE7DIE*:5100.98N/11359.23W_P
> HG3230/WinAPRS 2.2.8 -ABCANCALGARY -228-<530>
>
> N7RIG-4>APRX44,WIDE5-2:}N7RIG-4>APRX44,WIDE5-4/V:}N7RIG-2>APRZIP,ZDIGI:>090209z
> Richard Seattle Wa. 72155.1222@compuserve.com
>
> Can someone, anyone, tell me whether the second was heard direct or whether
> it was heard via WIDE5-2?
<snip>
> So, what is one to do???
```

Good question. Lets try this answer (discussion) and see what everyone thinks???

\* APRS doesnt care how a packet gets somewhere. It was designed to assume a flooding network where everyone involved in a NET, Emergency, EVENT or whatever, is responsible to choose an OUTGOING path to hit all other stations in that "NET, EVENT" Emergency".

\* This works, and will always work at the "scene" and in an "area" of interest.

\*\*\* Problem is, everyone coming on board now sees the state-wide, nation-wide, world-wide APRS network as a means of communicating anywhere and everywhere. Yes, it can be done. But it will get harder and harder.

\*\*\* Even as this "global" nature of APRS grows, we have always said that growth will be handled exactly like cellular, we make the cells smaller so that they can always accomodate a finite number of users within that cell.

\*\*\* This is why I keep saying that the only important PATH info is the "originating" digipeater. From that alone, we should always be able to figure out how to get back to that person.

\*\*\* WIDEn-n vastly improves network effeciency at the expense of lost path info. (at least n-N can tell you the number of hops)... But again, WIDEn-N is only a means of allowing geographically disperse users in a very large area to communicate in APRS where otherwise, there would not have been a critical mass of users to justify its use.... BUT THIS IS NOT what APRS was designed for...

So, simple answer (but controversial) to Jim's question might be "who cares"? Are we trying to build and maintain a 5 hop system, or are we going to remain focused on the one hop (maybe 2) real time "event" scenario?

Bob

---

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## 150. [aprsspec] Re: More on Conflict with WIDEn-N & Third Party Digipeating

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Dec 1999 10:49:13 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-55786-1999.12.18-10.04.48--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Sat, 18 Dec 1999, Roger Barker wrote:

```
> Finally, a question - when WIDEn-n counts down to an SSID of '0', should
> the digi that outputs the frame with WIDE5(-0) set the 'H' bit? I think
> it should, but I also don't think that all implementations of WIDEn-n
```

> do. (Same applies to TRACEn-n.) So, should WIDE5, or WIDE5\*, or both, be  
> regarded as a used up WIDE5-5?  
k  
When Kantronics was implementing it, that is what I told them to do... I  
dont know if they did it that way or not. Not enough WIDEn's in my area  
to test....

Bob

---

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## 151. [aprsspec] Re: Ommission: Position ambiguity munging rules

From: Steve Dimse <[k4hg@tapr.org](mailto:k4hg@tapr.org)>  
Date: Sat, 18 Dec 1999 10:56:24 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55791-1999.12.18-11.11.43--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55791-1999.12.18-11.11.43--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 12/17/99 5:14 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:

>  
>It is claimed the WG agreed to allow the authors to munge  
>position ambiguity any way they see fit. Since their public silence  
>on this issue seems not impugn this, can we assume this is true?  
>I cannot find any position ambiguity munging rules in the present  
>APRS-SPEC document.  
>  
>These munging rules need to be in the document if the statement  
>below is true, and most certainly need to be part of the certification  
>process.  
>  
Don't know what you mean by munging...that generally implies changing  
something. This situation is simply ignoring the ambiguity, so I would  
not choose that term.

Position ambiguity is in the spec. All programs need to handle position  
reports containing this data format. The spec does not contain  
information about how this, or most other things, are to be displayed by  
individual programs. My opinion was that this document should contain no  
requirements on how things should be displayed by client programs. For  
example, the range omission Bob posted the other day...there may be a  
need for documentation of things like this, but my opinion is they belong  
in a separate document, just as the Internet info should be a separate  
document. However, some of them crept into the spec, I do not have the  
time or energy to fight all these battles.

However, ambiguity is one I feel very strongly about. I am completely  
unconvinced of the need for it, and even if I were, no one has  
demonstrated to me a method of adequately conveying it in any program,  
much less one that can be successfully implemented in all APRS displays.

Steve K4HG

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## 152. [aprsspec] Programmers tips...

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 18 Dec 1999 14:54:24 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55817-1999.12.18-14.09.31--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55817-1999.12.18-14.09.31--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

IAN,

Here is another useful "Programmer aid" that might save programmers a lot  
of grief... in the area of GPSxyz decoding:

-----  
TIP: In the GPSxyz construct, there are 12 "x" table offset characters  
that designate the numeric offset to ADD to the "y" ascii value to get the  
final symbol. The "z" overlay character is one-for one. The following

two lists of these "x" TABLE characters and their equivalent ASCII table offsets may be handy to the programmer:

"B-33,P00,M-24,H08,L32,J74" These will be "primary" symbols  
"O-33,A00,N-24,D08,S32,Q74" These will be "alternate" symbols

Bob

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## 153. [aprsspec] Re: More on Conflict with WIDEn-N & Third Party Digipeating

From: Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Sat, 18 Dec 1999 19:44:09 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55818-1999.12.18-14.11.10--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55818-1999.12.18-14.11.10--lyris.aprsspec#tapr.org@lists.tapr.org)>  
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In article <[Pine.GS0.4.05L.9912181048160.26707-100000@arctic](mailto:Pine.GS0.4.05L.9912181048160.26707-100000@arctic)>, Bob  
Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes  
>On Sat, 18 Dec 1999, Roger Barker wrote:  
>  
>> Finally, a question - when WIDEn-n counts down to an SSID of '0', should  
>> the digi that outputs the frame with WIDE5(-0) set the 'H' bit? I think  
>> it should, but I also don't think that all implementations of WIDEn-n  
>> do. (Same applies to TRACEn-n.) So, should WIDE5, or WIDE5\*, or both, be  
>> regarded as a used up WIDE5-5?  
>k  
>When Kantronics was implementing it, that is what I told them to do... I  
>dont know if they did it that way or not. Not enough WIDEn's in my area  
>to test....

A KPC3 with 8.2 firmware doesn't. (Easily tested by sending a frame via  
WIDE5-1, that way you don't need any other WIDEn's.)

So, to return to the original example -  
VE7DIE>APW240,N7IFJ-10\*,WIDE5;)etc...

It's probably a "used up" WIDE5-5 with the last digi having been a  
Kantronics TNC.

--

Roger Barker, G4IDE [roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)  
Boston, UK <http://www.packetradio.org.uk>

---

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## 154. [aprsspec] Re: Mic-E Destination Address Field

From: Ian Wade <[ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)>  
Date: Sat, 18 Dec 1999 22:35:03 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55838-1999.12.18-16.50.57--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55838-1999.12.18-16.50.57--lyris.aprsspec#tapr.org@lists.tapr.org)>  
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In article <[LYR11659-55464-1999.12.16-13.32.33--ian#dowrmain.demon.co.uk@lists.tapr.org](mailto:LYR11659-55464-1999.12.16-13.32.33--ian#dowrmain.demon.co.uk@lists.tapr.org)>, Lief Hendrickson <[lhendric@mail.sdsu.edu](mailto:lhendric@mail.sdsu.edu)> writes  
>The following related comments apply to Chapter 10, APRS Protocol Version  
>1.0. For these comments, LSB is numbered as zero.  
>  
>1. Page 37. There appears to be inadequate definition in MIC-E  
>Destination Address Field-  
>The fifth bit in each of the first 6 bytes of the destination field is not  
>adequately defined. It is shown by the symbol "x" (the 9th bullet on page  
>37) which we are told is either a 0 or 1. However, there is no definition  
>of where the 0 or 1 come from. We can handle the value of x as being part  
>of the bit pattern for the corresponding letter and then follow the table.  
>However, what is the purpose of the "x" parameter? The condition  
>corresponding to 0 and the condition corresponding to 1 should be  
>specified...unless it's a secret! It it just a flag to indicate the  
>shifted sequence? If so, why even bother since the P thru Z sequence could  
>convey the same information.  
>  
>2. page 38. The convention on latitude digit for letters A thru K is not  
>clear-

>The representation on page 37 indicates the latitude digits are the  
>numerical value of the nibble made up of bits 1 thru 4 (shown as "dddd" in  
>the 1st and 2nd bytes, "mmmm" in the 3rd and 4th bytes and "hhhh" in the  
>5th and 6th bytes). For the letter "A", the nibble is 0001. This is  
>clearly the decimal value 1, not the decimal value 0 shown in the upper  
>table on page 38. For "B", the corresponding nibble is 0010 which is the  
>decimal value 2, not the decimal value 1 shown in the table, etc. for the  
>remaining letters in the A to J sequence. They are all shifted by 1.  
>Possibly the notation "(custom)" in the table indicates it is a look-up  
>table (consisting of a offset-by-one pattern) for the A to J sequence  
>rather than the numerical value of the nibble (which would make more  
>sense!). If so, it should be stated- and one would wonder the reason (and  
>value) for this difference in representation over the more straight-forward  
>direct numerical value of the nibble.  
>  
>  
>I may have missed some reason for the above. Explanation or corrections of  
>interpretation would be appreciated.

Hi Lief.

The key to all of this is the table at the top of page 38 of the APRS  
Protocol spec draft (Mic-E Destination Address Field Encoding). It shows  
all of the possible ASCII characters (that will be left-shifted by one bit  
on transmission, per the AX.25 spec) for the first six address bytes.

Example 1: From the table, if the first address byte contains the letter  
"S", it represents the latitude digit "3" and a \*standard\* message "1"  
bit. The corresponding transmitted bit pattern is 10100110 (i.e. the  
letter "S" shifted one bit left). In this case, the "x" bit (bit 5) is  
"1".

Example 2: From the table, if the first byte contains the letter "D", it  
again represents the latitude digit "3", but this time with the \*custom\*  
message bit set. The transmitted bit pattern is 10001000 (i.e. "D" left  
shifted). In this case, bit 5 is "0".

So this shows how bit 5 can be either a "1" or a "0".

NOTE: In example 1, the latitude value corresponds to bits 1-4 (0011), but  
in example 2, the latitude value is one less than the value of bits 1-4  
(as you correctly pointed out).

This means that there is actually an error in the documentation on page  
37. The first bullet (under the format diagram) should read:

~~~~~  
* Six encoded latitude 4-bit nibbles specifying degrees, minutes ... etc
~~~~~

That is, the word "encoded" replaces "binary-coded-decimal", since the  
nibble is not necessarily a BCD digit as originally stated.

Bottom line: the table at the top of page 38 is the fundamental definition  
of the address encoding. I will be changing much of the the text on page  
37 to emphasize this. I will also be adding examples like the ones above.

Sorry for any confusion -- this thing had me confused for months before I  
finally cracked it!

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX]          ~55km/35 miles NNW of London |
|                               email: g3nrw@arrl.net              |
|                               |                                  |
| APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/Faprswg.html|
+-----+
```

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## 155. [aprsspec] Re: Ommission: Position ambiguity munging rules

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 18 Dec 1999 17:40:43 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55841-1999.12.18-16.54.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
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Steve Dimse wrote:

>  
> Don't know what you mean by munging...that generally implies changing  
> something. This situation is simply ignoring the ambiguity, so I would  
> not choose that term.

Yes, you are changing something.

Steve Dimse wrote on 16 Dec 1999 in a message titled "Re: Default Null":

> All my software treats 072\_\_\_.W as 72.0000, and will continue to.

Now 72 degrees is not 72.0000 degrees. Depending on the rounding method, your reading of 72.0000 degrees could be off up to -0.9999 degrees. And for most flugate compasses, you can only indicate to the nearest 5 degrees, meaning your error would now be off up to -9.9999 degrees.

Now, \_\_\_pay attention\_\_\_ to this next paragraph. It is the key to the misunderstanding I think we have here.

This munging is fine as long as you understand this error and it is acceptable to you. The problem comes into being when (or if) a author decides to pass the munged (incorrect) data on without passing on the degree of precision (or ambiguity level) TO ANOTHER STATION.

> The spec does not contain  
> information about how this, or most other things, are to be displayed by  
> individual programs.

I have no concern at all about end user display applications. Re-read the message you are replying to.

> However, ambiguity is one I feel very strongly about. I am completely  
> unconvinced of the need for it, and even if I were, no one has  
> demonstrated to me a method of adequately conveying it in any program,

Then the spec is incomplete. If the spec is going to include ambiguity, it also needs to include a way to convey ambiguity (which it appears to do). If you don't agree with the spec, then I think you should either remove it or document it better. I don't think the solution is to ignore the spec as you suggested in another message.

>However, ambiguity is one I feel very strongly about. I am completely  
>unconvinced of the need for it, and even if I were, no one has

As what we are discussing is basic high school chemistry stuff, there must be some sort of misunderstanding as I know you are a smart person.

So explain to me exactly why you are unconvinced of the need to convey ambiguity in APRS?? While you have stated this on at least two occasions, you yet to have actually told anyone here why you feel this way (other than in a end user display app, which is not the concern, as we both agree on).

>demonstrated to me a method of adequately conveying it in any program,

> much less one that can be successfully implemented in all APRS displays.

Again, re-read my message(s) on the topic. I said nothing about display applications. I said when the data is passed on to another party.

I've attached the specific parts I'd like addressed, including the

quote from Paul Keinanen who first pointed out this error.

So either everyone follows the rules for ambiguity (and doesn't munge the data) or specific munging rules are added to the SPEC indicating in what cases (such as end user display apps) that munging will be allowed. You can't leave this out of the spec as it will make the whole section on position ambiguity pointless.

Or is this already in the SPEC and I am just missing it?

As it stands now, you are saying there is a undocumented rule that no-one need pay any attention to the ambiguity spec. This exception needs to be documented, and as it is not, my OMISSION comment seems valid

Thank you

-Jeff

-----

It is claimed the WG agreed to allow the authors to munge position ambiguity any way they see fit. Since their public silence on this issue seems not impugn this, can we assume this is true? I cannot find any position ambiguity munging rules in the present APRS-SPEC document.

These munging rules need to be in the document if the statement below is true, and most certainly need to be part of the certification process.

-Jeff

> >07201.7\_W represents longitude to nearest 1/10th of a minute.  
> >07201.\_\_\_W represents longitude to nearest minute.  
> >0720.\_\_\_W represents longitude to nearest 10 minutes.  
> >072\_\_.\_\_\_W represents longitude to nearest degree.  
> >  
> >where \_\_ represent the space character. It is clearly wrong to receive  
> >a position of 072\_\_.\_\_\_W and forward it as 07200.00W, so either the  
> >ASCII string must be stored and forwarded or some other means must be  
> >used the number of digits used.  
> >  
> >Well, this has been a MAJOR point of contention between Bob and myself  
> >over the last year. I am completely unconvinced that there is a need for  
> >ambiguity in the first place. What we finally decided after an great deal  
> >of arguing is we would place it into the protocol, but it is up to the  
> >individual programmer on if, and how, to handle the ambiguity.

---

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---

## 156. [aprsspec] Format Error

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sat, 18 Dec 1999 22:53:01 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55900-1999.12.19-00.08.17--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55900-1999.12.19-00.08.17--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In an number of locations (page 28 is one example), the format description calls out time as optional for the !, =, /, @ formats.

>From what I can make of the format descriptions:

! and = specify location messages without timestamp, and  
/ and @ specify location messages with timestamp.

Clearly, timestamp is NOT OPTIONAL in any of these formats.

It is PROHIBITED in "!" and "="  
It is REQUIRED in "/" and "@"

It is patently false to call it optional in any of these.

While I am impressed with the incredible work done to assemble this draft of the APRS protocol, to my mind, this is absolutely incorrect. And, it appears over and over throughout the spec.

This is not "just a matter of semantics". It has to do with truthfulness and accuracy for programmers yet to come onto the scene.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.0R.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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---

### 157. [aprsspec] Re: Mic-E Destination Address Field

From: Roger Barker <roger@peaksys.co.uk>  
Date: Sun, 19 Dec 1999 09:58:40 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55918-1999.12.19-04.14.52--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-55838-1999.12.18-16.50.57--roger#peaksys.co.uk@lists.tapr.org>, Ian Wade <ian@dowmain.demon.co.uk> writes  
[snip]

>The key to all of this is the table at the top of page 38 of the APRS  
>Protocol spec draft (Mic-E Destination Address Field Encoding). It shows  
>all of the possible ASCII characters (that will be left-shifted by one bit  
>on transmission, per the AX.25 spec) for the first six address bytes.

It's difficult to see why the Mic-E destination address is presented in its AX25 link-layer format.

--

Roger Barker, G4IDE   roger@peaksys.co.uk  
Boston, UK           http://www.packetradio.org.uk

---

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### 158. [aprsspec] Re: Mic-E Destination Address Field

From: Ian Wade <ian@dowmain.demon.co.uk>  
Date: Sun, 19 Dec 1999 11:07:21 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55919-1999.12.19-05.23.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR11659-55918-1999.12.19-04.14.52--ian#dowmain.demon.co.uk@lists.tapr.org>, Roger Barker <roger@peaksys.co.uk> writes

>

>It's difficult to see why the Mic-E destination address is presented in  
>its AX25 link-layer format.

>

Roger, if by that you mean "why is the format diagram on page 37 shown the way it is?", then I agree. I almost omitted that diagram when writing the spec -- I only left it in because other people had documented that way, and it was familiar to a large audience.

Having discovered the errors in it, I have now decided to redraw it, omitting any reference to individual bits within each byte (for the first 6 bytes). The lookup table on page 38 says it all.

73  
Ian, G3NRW



```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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---

## 159. [aprsspec] Error: Storm Data

From: "Dale Huguley" <[kg5qd@worldnet.att.net](mailto:kg5qd@worldnet.att.net)>  
Date: Sun, 19 Dec 1999 11:06:06 -0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55920-1999.12.19-05.23.33--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55920-1999.12.19-05.23.33--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hi All- this is a repost of my comments from Dec. 5th . This is the last day of the comment period for the protocol, and there has been zero discussion of the hurricane protocol. I can assume that either my comments are taken in whole- or are being ignored. I am not very upset at all this due to my intention to propose a shorter and more descriptive wind field protocol after that is acceptable.

The hurricane spec changes the order of the data in the pressure and wind field areas. This means to implement the draft a 100 % changeover in user software by the next hurricane season.

I have serious problems with what I consider "geocentric" definitions:

There are parts of the world that do not use "hurricane" for a severe tropical cyclone. They are called Typhoons,Tropical Cyclones,Severe Tropical Cyclones etc..

The winds are defined as MPH. This is a major problem due to the more universal standard being knots. Internally at the National Hurricane Center they use knots and only convert to MPH for "Public" statements designed for U.S. distribution. The vast majority of bulletins from Guam, Miami and Honolulu are in knots. If a user wants the winds to show in MPH, the display software should do the conversion.

Radius should be in Nautical Miles to be consistent with knots.

Drop the business about gusts being in the last 5 minutes- this is not real time data but estimates of winds possible (even in "present" positions)

Time should be the "Valid" time of the object- not the time received or transmitted

The names used in the example will not work- send two objects with the same name and only one will be kept, the first will be overwritten.

73 de kg5qd Dale

---  
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---

## 160. [aprsspec] Re: Error: Storm Data

From: John Ackermann <[jra@febo.com](mailto:jra@febo.com)>  
Date: Sun, 19 Dec 1999 08:52:36 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-55923-1999.12.19-08.07.50--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-55923-1999.12.19-08.07.50--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hi Dale --

I just wanted to let you know that your comments are in the queue.

Although many of the comments posted to the list have resulted in lively discussion involving Ian and the various authors, that discussion is really outside the formal process, which calls for all comments to be considered by the WG after the comment period closes.

Please don't take the lack of discussion on this list as a sign that the comment hasn't been noticed -- if the authors haven't been thinking about it already (and I don't know whether they have), they will see it again when I bundle up the set of comments and hand it to them in the next couple of days.

73,  
John N8UR (jra@febo.com)  
Administrative Chair, APRS WG  
----

> Hi All- this is a repost of my comments from Dec. 5th . This is the last  
> day of the comment period for the protocol, and there has been zero  
> discussion of the hurricane protocol. I can assume that either my comments  
> are taken in whole- or are being ignored. I am not very upset at all this  
> due to my intention to propose a shorter and more descriptive wind field  
> protocol after that is acceptable.  
>  
> The hurricane spec changes the order of the data in the pressure and wind  
> field areas. This means to implement the draft a 100 % changeover in user  
> software by the next hurricane season.  
>  
> I have serious problems with what I consider "geocentric" definitions:  
>  
> There are parts of the world that do not use "hurricane" for a severe  
> tropical cyclone. They are called Typhoons,Tropical Cyclones,Severe Tropical  
> Cyclones etc..  
>  
> The winds are defined as MPH. This is a major problem due to the more  
> universal standard being knots. Internally at the National Hurricane Center  
> they use knots and only convert to MPH for "Public" statements designed for  
> U.S. distribution. The vast majority of bulletins from Guam, Miami and  
> Honolulu are in knots. If a user wants the winds to show in MPH, the  
> display software should do the conversion.  
>  
> Radius should be in Nautical Miles to be consistent with knots.  
>  
> Drop the business about gusts being in the last 5 minutes- this is not real  
> time data but estimates of winds possible (even in "present" positions)  
>  
> Time should be the "Valid" time of the object- not the time received or  
> transmitted  
>  
> The names used in the example will not work- send two objects with the same  
> name and only one will be kept, the first will be overwritten.  
>  
> 73 de kg5qd Dale  
>  
>  
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## 161. [aprsspec] Re: Mic-E Destination Address Field

From: Roger Barker <roger@peaksys.co.uk>  
Date: Sun, 19 Dec 1999 13:52:33 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55924-1999.12.19-08.09.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-55919-1999.12.19-05.23.15--roger#peaksys.co.uk@list  
s.tapr.org>, Ian Wade <ian@dowrmain.demon.co.uk> writes  
>In article <LYR11659-55918-1999.12.19-04.14.52--ian#dowrmain.demon.co.uk  
>@lists.tapr.org>, Roger Barker <roger@peaksys.co.uk> writes  
>  
>>  
>>It's difficult to see why the Mic-E destination address is presented in  
>>its AX25 link-layer format.  
>>  
>  
>Roger, if by that you mean "why is the format diagram on page 37 shown  
>the way it is?", then I agree. I almost omitted that diagram when  
>writing the spec -- I only left it in because other people had

>documented that way, and it was familiar to a large audience.

Yes, I appreciate that it already existed, and that a large number of people had already torn out some hair trying to understand it! ;-)

The point is, of course, that most APRS applications handling Mic-E data will be using the destination address in its ASCII, i.e. not AX25 shifted, format. Exactly as they will use every other AX25 destination address in its ASCII format. (Most applications wouldn't even be able to access it in AX25 format.)

As a general point - I don't think the spec should concern itself at all with link-layer implementation.

--

Roger Barker, G4IDE    roger@peaksys.co.uk  
Boston, UK            http://www.packetradio.org.uk

---

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## 162. [aprsspec] Re: Mic-E Destination Address Field

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 19 Dec 1999 10:23:39 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-55929-1999.12.19-09.39.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 19 Dec 1999, Roger Barker wrote:

> It's difficult to see why the Mic-E destination address is presented in  
> its AX25 link-layer format.

I agree. I always think in terms of its ASCII "displayed" value. I think talking about all the shifting just encumbers the details...

Bob

---

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## 163. [aprsspec] Thanks to everyone

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Mon, 20 Dec 1999 06:20:02 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56026-1999.12.20-00.36.09--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

A quick line to thank everyone who's contributed to the discussion of the APRS Protocol specification draft. Your feedback has given me and the APRS Working Group a lot to think about over the holiday!

As Working Group Chairman John Ackermann said yesterday, please don't think we're ignoring your points if we didn't comment on them. There just wasn't time to address every one of them in this list before the deadline.

I now have a hardcopy of all the comments and will be going through them in detail with the Working Group. Once I have a better feel for how long this will take, John will make a public announcement saying when the Working Group will publish the final version of the spec.

Meantime, have a great Christmas and New Year's!

73

Ian, G3NRW  
Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|                                     email: g3nrw@arrl.net |
|                                     |                   |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

+-----+

---

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## 164. [aprsspec] ACK problem in SPEC

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 20 Dec 1999 10:28:28 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-56061-1999.12.20-09.43.45--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-56061-1999.12.20-09.43.45--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

The section on MESSAGES and ACKS is ambiguous about what constitutes a valid "ACK". Some authors require the FROM-CALL of the ACKing station to MATCH while others only rely on the message number.

Where this problem is seen on the air is in the following example:

Station A sends an email message via the EMAIL engine. His outgoing message is addressed to the pseudocall of "EMAIL"  
The reply ACK comes back FROM the callsign of the engine's TNC, not the matching callsign "EMAIL".

SOLUTIONS:

- 1) Sprouls solved it by making an "exception" to the callsign "EMAIL"
- 2) Brent solved it by accepting any matching ACK number regardless of who sent it...
- 3) APRSdos wont accept the EMAIL ack, because it is not from the matching TOCALL.

None of these are good permanent solutions. I think the following:

- 4) The "right" and most general solution is for an EMAIL engine to use KISS mode and to send back the ACK with the proper "EMAIL" from call.

I am not picking on "EMAIL" here. it is just one example. There are also ICQ and other pseudocall engines that will be used on APRS...

BOTTOM LINE. Does the SPEC need to solve this problem by making a stand on the requirement (or lack of requirement) for a CALLSIGN match for ACKS?

At this point in spec 1.0, maybe the politically correct position is to add a sentence at the top of page 58:

Whether or not the FROM-CALL of the ACK is required to come from the same callsign as the ADDRESSEE is implemented differently in different versions. This issue is currently unresolved...

---

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## 165. [aprsspec] Re: Mic-E Destination Address Field

From: "Lief Hendrickson" <[lhendric@mail.sdsu.edu](mailto:lhendric@mail.sdsu.edu)>  
Date: Mon, 20 Dec 1999 17:43:41  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-56095-1999.12.20-17.58.52--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-56095-1999.12.20-17.58.52--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Ian,

Thanks for your response. Good explanation about the fact that the latitude nibble is encoded rather than simply the numerical value of the nibble. The examples you gave were "S" and "D". The question still remains of why a transmitting station would use one set of letters over another (A thru K versus P thru Z). As you show, the "S" and "D" mean exactly the same. The only difference is whether bit 5 is "0" or "1". Well, the value of a bit being "0" or "1" conveys information. So bit 5 does convey information though no mention is made of what information is conveyed (if any!) Why would make a system choose use of "S" over use of "D" (per example)? If no information is conveyed, it should be so stated, i.e. the fact that the value of bit 5 being "0" or "1" is not used for any purpose (for the time being!). If A thru K is equivalent to P thru Z why not just get rid of A thru K and streamline the decoding.  
Thanks.

-Lief

At 12:00 AM 12/18/99, you wrote:

>-----  
>  
>Subject: Re: Mic-E Destination Address Field  
>From: Ian Wade <ian@dowrmain.demon.co.uk>  
>Date: Sat, 18 Dec 1999 22:35:03 +0000  
>  
>In article  
><LYR11659-55464-1999.12.16-13.32.33--ian@dowrmain.demon.co.uk@l  
>ists.tapr.org>, Lief Hendrickson <lhendric@mail.sdsu.edu> writes  
>>The following related comments apply to Chapter 10, APRS Protocol  
>Version  
>>1.0. For these comments, LSB is numbered as zero.  
  
<...stuff deleted...>  
  
>Hi Lief.  
>  
>The key to all of this is the table at the top of page 38 of the APRS  
>Protocol spec draft (Mic-E Destination Address Field Encoding). It shows  
>all of the possible ASCII characters (that will be left-shifted by one  
>bit  
>on transmission, per the AX.25 spec) for the first six address bytes.  
>  
>Example 1: From the table, if the first address byte contains the letter  
>"S", it represents the latitude digit "3" and a \*standard\* message "1"  
>bit. The corresponding transmitted bit pattern is 10100110 (i.e. the  
>letter "S" shifted one bit left). In this case, the "x" bit (bit 5) is  
>"1".  
>  
>Example 2: From the table, if the first byte contains the letter "D", it  
>again represents the latitude digit "3", but this time with the \*custom\*  
>message bit set. The transmitted bit pattern is 10001000 (i.e. "D" left  
>shifted). In this case, bit 5 is "0".  
>  
>So this shows how bit 5 can be either a "1" or a "0".  
>  
>  
>NOTE: In example 1, the latitude value corresponds to bits 1-4 (0011),  
>but  
>in example 2, the latitude value is one less than the value of bits 1-4  
>(as you correctly pointed out).  
>  
>This means that there is actually an error in the documentation on page  
>37. The first bullet (under the format diagram) should read:  
>  
>~~~~~  
>\* Six encoded latitude 4-bit nibbles specifying degrees, minutes ... etc  
>  
>~~~~~  
>  
>That is, the word "encoded" replaces "binary-coded-decimal", since the  
>nibble is not necessarily a BCD digit as originally stated.  
>  
>Bottom line: the table at the top of page 38 is the fundamental  
>definition  
>of the address encoding. I will be changing much of the the text on page  
>37 to emphasize this. I will also be adding examples like the ones above.  
>  
>Sorry for any confusion -- this thing had me confused for months before I  
>finally cracked it!  
>  
>73  
>Ian, G3NRW  
>Technical Editor, APRS Protocol Specification  
>  
>  
  
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## 166. [aprsspec] Re: Mic-E Destination Address Field

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Tue, 21 Dec 1999 06:40:43 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-56165-1999.12.21-01.06.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
In article <LYR11659-56095-1999.12.20-17.58.52--ian#downmain.demon.co.uk@lists.tapr.org>, Lief Hendrickson <lhendric@mail.sdsu.edu> writes

>If A thru K is equivalent to P thru Z why not just get rid of A thru K and  
>streamline the decoding.

Lief, A-K is *\*not\** equivalent to P-Z.

The latitude values happen to be the same in both those ranges, but the message "1" bit has a different meaning. If the character is "D", the *\*custom\** message bit is set. If the character is "S", the *\*standard\** message bit is set.

Example 1: If the first 3 bytes of the address are "D4F", from the table on page 38 you'll see this means:

- a. the latitude digits are "345".
- b. the message is a *\*custom\** message, because the address contains letters in the range A-K. From the table, the message bits (bits A/B/C) are "101". From the table at the bottom of the page, this corresponds to "Custom-2" (which can have any prior agreed meaning).

Example 2: If the first 3 bytes of the address are "S4U":

- a. the latitude digit are again "345".
- b. the message this time is a *\*standard\** message, because the address contains letters in the range P-Z. From the table, the message bits are again "101", corresponding to standard message "In Service".

Finally, forget about the meaning of any individual *\*bit\** in the first 6 bytes of the address. Any particular bit may be a "1" or a "0" depending on the ASCII character left-shifted. So bit 5 doesn't have any particular meaning -- just think about encoded *\*bytes\**.

[If you decide to write code to handle this, you could write out the bit patterns corresponding to every ASCII character (left-shifted) in the table, and then possibly decide you *\*can\** handle individual bits algorithmically. Or you could take the easy way out and simply use table lookup. The choice is yours -- that's an implementation issue, not a protocol issue].

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800  [I091SX]           ~55km/35 miles NNW of London |
|                               email: g3nrw@arrl.net                |
|                               |                                    |
| APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 167. [aprsspec] ACK processing

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 21 Dec 1999 12:28:44 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56212-1999.12.21-11.44.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

One more addition which I think is VERY important to convey to authors.

Insert at the top of page 58 after the ACK table somethign to the effect of:

APRS uses an end-for-end ACKnowledgment system. The probabiliity of receiving an ACK degrades very rapidly as the number of hops increases.

To counter this, authors are encouraged to implement schemes to add redundancy to ACKS. Schemes currently in use:

- 1) ACK all dupes of incoming messages
- 2) Do not filter out ACK dupes at Igates and Nodes
- 3) Generate multiple ACKS if a message is received over a long path
- 4) Schedule a duplicate delayed ACK if a message has been received multiple times
- 5) Remember, that modern DIGIS and APRServe filters all dupes within 30 seconds, so duplicates must be separated by at least 30+ secs.

Bob

---

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---

## 168. [aprsspec] Re: Mic-E Destination Address Field

From: "Lief Hendrickson" <lhendric@mail.sdsu.edu>  
Date: Wed, 22 Dec 1999 13:34:53  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56341-1999.12.22-13.50.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ian,

Thanks for comments. The discussion about interpretation is good. However, the confusion in reading the spec is still there. The way the spec is written on page 37 is confusing. The spec just says "x" is a "0" or "1". A reader naturally wonders O.K. why the significance of saying a bit is either a "0" or a "1" (it couldn't be anything else but a "0" or a "1"!).

>From what we've discussed, when the "x" bit is a "1", it means the message bit is a custom. As you've pointed out, this is because the character set corresponding to the "Custom" designation fall in the A thru K range- these all have that bit equal to "1". So, why not just say that in the spec. If anything is to be said about the "x" bit, it should be more than the obvious that it is a "0" or a "1"- which is true of any bit!

Maybe the spec could say something like x = 1 corresponds to a custom message. I know this falls in place from being in the A thru K set. One can already figure that out from the table. This is just a suggestion of what could be said about "x" if the spec is to identify it as a parameter- which it currently does on page 37. It's not good to have dangling parameters. Of course, then we have the problem of what to say about x = 0 since that could correspond to the character set 0 thru 9 or to the set P thru Z- of which only the latter corresponds to a standard message. Difficulty in explaining the situation should not be a reason for ignoring it. I suppose it could be said the "x" bit just falls in place depending on other circumstances. However, its meaning should be addressed somehow if it is shown with its own definition line.

What does use of the character set 0 thru 9 say about whether a message is standard or custom? And what happens if the "x" bits of the first three bytes are different. This is not clear relative to the bottom table on page 38. (Please see comment after your example 1 below)?

At 12:00 AM 12/22/99, Ian Wade wrote:

```
>-----
>
>In article <LYR11659-56095-1999.12.20-17.58.52--ian#downmain.demon.co.uk
>@lists.tapr.org>, Lief Hendrickson <lhendric@mail.sdsu.edu> writes
>
>
>>If A thru K is equivalent to P thru Z why not just get rid of A thru K
and
>>streamline the decoding.
>
>
>Lief, A-K is *not* equivalent to P-Z.
>
>The latitude values happen to be the same in both those ranges, but the
>message "1" bit has a different meaning. If the character is "D", the
>*custom* message bit is set. If the character is "S", the *standard*
>message bit is set.
>
```

>Example 1: If the first 3 bytes of the address are "D4F", from the table  
>on page 38 you'll see this means:  
>  
>a. the latitude digits are "345".  
>  
>b. the message is a \*custom\* message, because the address contains  
>letters in the range A-K. From the table, the message bits (bits A/B/C)  
>are "101". From the table at the bottom of the page, this corresponds to  
>"Custom-2" (which can have any prior agreed meaning).  
>

Why did you use "4" as the second byte? If this example was intended to  
specify a "custom" message, it seems "E" should be used instead of "4" as  
the second byte.

Suppose the first three bytes were "D4U". This would still be the same  
latitude, but the first byte is "Custom", the second is neither "Custom" or  
"Standard", and the third is "Standard". Where would this fall in the  
table at the bottom of page 38?

>  
>Example 2: If the first 3 bytes of the address are "S4U":  
>  
>a. the latitude digit are again "345".  
>  
>b. the message this time is a \*standard\* message, because the address  
>contains letters in the range P-Z. From the table, the message bits are  
>again "101", corresponding to standard message "In Service".  
>

Again, the second byte is neither "Custom" or "Standard". It could have  
been "T" instead of "4". In that case, the "B" parameter would still be  
"1", but its byte would be within the "Standard" character set. ...or is  
there some requirement I am missing about the character set of the second  
byte.

The table at the bottom of page 38 has a column for "Standard" and a column  
for "Custom". Yet the three bytes (the parameters "A", "B", & "C") could  
potentially be different in specifying "Custom" or "Standard" leading to  
confusion.

>  
>Finally, forget about the meaning of any individual \*bit\* in the first 6  
>bytes of the address. Any particular bit may be a "1" or a "0" depending  
>on the ASCII character left-shifted. So bit 5 doesn't have any  
>particular meaning -- just think about encoded \*bytes\*.  
>  
>[If you decide to write code to handle this, you could write out the bit  
>patterns corresponding to every ASCII character (left-shifted) in the  
>table, and then possibly decide you \*can\* handle individual bits  
>algorithmically. Or you could take the easy way out and simply use table  
>lookup. The choice is yours -- that's an implementation issue, not a  
>protocol issue].  
>

Well, I agree it is the combination of bits that is important. Using the  
encoding of the table will work. However, there is still the confusion of  
how to interpret something if there is inconsistency in use of the three  
character sets (Standard, Custom, and neither). For example, "D4U" or  
"DEU". If mixing types is prohibited, it should be so stated. Or perhaps  
specify something like- use only the first byte to determine type ("Custom"  
or "Standard").

It is a protocol issue in that there is the possibility of mixing the  
character sets and it isn't clear which one would take precedence. If the  
meaning of bit "x" is not important for a protocol spec, perhaps some other  
representation would be better- rather than simply saying it is a "0" or a  
"1" as shown on page 37.

Thanks.  
Lief

---

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## 169. [aprsspec] Re: Mic-E Destination Address Field



From: Ian Wade <ian@dowmain.demon.co.uk>  
Date: Wed, 22 Dec 1999 23:42:46 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56420-1999.12.23-02.20.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR11659-56341-1999.12.22-13.50.07--ian#dowmain.demon.co.uk@lists.tapr.org>, Lief Hendrickson <lhendric@mail.sdsu.edu> writes  
>Ian,  
>  
>Thanks for comments. The discussion about interpretation is good.  
>However, the confusion in reading the spec is still there. The way the  
>spec is written on page 37 is confusing.

Yes, I know it is confusing. A few days ago I said I was going to rewrite it. In the next release of the document it will look quite different.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
+-----+
```

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---

## 170. [aprsspec] Re: Opps, my apologies

From: Tim Salo <salo@networkcs.com>  
Date: Thu, 23 Dec 1999 15:28:19 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56492-1999.12.23-15.43.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Subject: [aprsspec] Re: Opps, my apologies  
> Date: Thu, 16 Dec 1999 15:12:42 -0600  
> From: Steve Dimse <k4hg@tapr.org>  
> [...]  
> This is not what the field [the AX.25 destination field when encoded as the  
> originating software product and version] is intended for. You have no idea  
> how frustrating it is to have someone send you a message saying "the packet  
> from WZ9ZZZ isn't decoded by your program", and then to go dig out a  
> packet from that station, see it is incorrectly formed, and have no idea  
> which program sent it.  
>  
> This is why the author/manufacturer field is there. It is very much  
> appreciated by those of us that need to troubleshoot the system, and  
> needs to remain in place.

I still don't believe this is a particularly strong argument.

A trivial alternative is to simply ask WZ9ZZZ what software he or she is running. Why, you could even try sending an APRS message to WZ9ZZZ...

I believe there are much better uses that could be made of the AX.25 destination address, (such as using it as a multicast address, but that is another proposal).

By the way, including the APRS protocol version number somewhere in each APRS packet (although not necessarily in the AX.25 destination address as was proposed) has the significant advantage that when new versions of APRS are defined the receiver can determine whether to parse the packet as an APRS 1 packet or an APRS 2 packet. (I suppose I should save this mail for all the e-mail I will see that says: "We can't do that in APRS 2.0 because the receiver might try to parse the packet as an APRS 1.0 packet".)

[Insert long editorial here about why now is the time to think about how we will migrate to new versions of the APRS protocol...]

-tjs

---

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---

## 171. [aprsspec] Compressed Position Report Error??

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Thu, 23 Dec 1999 22:44:15 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-56558-1999.12.23-23.59.43--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-56558-1999.12.23-23.59.43--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello Group -

On page 30, under "advantages" (9th bullet), it says:

"Potential 400% reduction of raw GPS NMEA data length"

I hope that is a typo, or someone is a miracle worker. A 100% reduction would make it 0 length. How long would a message be when reduced by 400%?

I can see 40%.

Best wishes -

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                        |                            |
|------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>           | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.UA.NOAM">KA7EHK@KC7KFE.OR.UA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                 | Oregon State University    |

  
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## 172. [aprsspec] Mic-E Destination Address detection

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Thu, 23 Dec 1999 22:44:56 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-56559-1999.12.24-00.00.22--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-56559-1999.12.24-00.00.22--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello All -

How does one distinguish a Mic-E destination address from one of the usual APRS net names?

Example: APW522 has a legit Mic-E translation, as far as I can see.

Please don't tell me that the parser has to wait until discovering the message type later in the packet!!!

Also, is it correct, as it appears, that if one has any net name filtering on, that most Mic-E packets will be lost?

Thanks....

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                        |                            |
|------------------------------------------------------------------------|----------------------------|
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| <a href="mailto:KA7EHK@KC7KFE.OR.UA.NOAM">KA7EHK@KC7KFE.OR.UA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                 | Oregon State University    |

  
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## 173. [aprsspec] Mic-E ABC bits

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 23 Dec 1999 22:45:24 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56563-1999.12.24-00.00.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello -

Is it required that all one bits in the ABC set be from the same Custom or Standard group?

For example, suppose that "E" were used to indicate Custom and 40 degrees. Would the character for 5 degrees have to be "F" or could it be "U"?

Should a Mic-E packet that mixes custom and standard group characters be rejected as invalid?

Thanks again -

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
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ka7ehk@yahoo.com           Oregon State University  
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## 174. [aprsspec] Mic-E Information Field

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 23 Dec 1999 22:45:36 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56565-1999.12.24-00.01.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings -

In the expressions at the end of page 39, it says:

d+28: Binary degrees of longitude. To decode:

1. subtract 28
2. if the L bit is set, add 100 to get the final value of longitude
3. subtract 80 if 180<=D<=189

"D" is not defined anywhere!

This same construction is also used several times on page 40.

Please be more explicit!

Thank you,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
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## 175. [aprsspec] Telemetry Data Format

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 23 Dec 1999 22:46:48 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56566-1999.12.24-00.02.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi Group -

Here are some questions about Telemetry format

Question 1 -----

On page 54, is the Telemetry Sequence Number constrained to numeric characters?

Question 2 -----

What does one do with fewer than 6 quantities? Is it just terminated at the end of the last quantity used, or must the comma-delimited format be filled out. In other words, is

T#005,199

valid?

Or, is it required

T#005,199,,,,,

Or, is it required

T#005,199,0,0,0,0,0

Question 3 -----

Why are the "analog" values constrained to the range 0-255? Why not 0-511 or 0-999? I can think of a number of situations where higher resolution is appropriate.

Question 4 -----

Why is the last field called "Digital"? These are all digital in that they are discrete integers. The last field would be better called "binary" because it is a set of digits representing 8 binary values. I believe that this would provide better understanding of the function of the field.

Question 5 -----

Is there an error in the polynomial expansion example? For coefficients 0,5.2,0 and value 199, it shows an expansion of  $0*128^2 + 5.2*199 + 0$ . I believe that the first term should be  $0*199^2$ . While it does not change the outcome (because the coefficient is 0), it makes it very confusing for someone to understand how to do the expansion.

Thanks

Jim Wagner  
Oregon Research Electronics

-----  
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ka7ehk@yahoo.com           Oregon State University  
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## 176. [aprsspec] Message Questions

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 23 Dec 1999 22:47:16 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56569-1999.12.24-00.02.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, Everyone -

In the description of Message Acks on page 58, it says nothing about ack timing. Is ACK sent once for each message received or are multiple ACKs sent?

And, in the description of "message groups", it says "An APRS station can specify special Message Groups, containing lists of callsigns that the stations will read messages from (in addition to messages addressed to itself). Such lists are defined internally by the user at the receiving station, and are used to filter received message traffic."

Then, a paragraph later, it says:

"The receiving station will only acknowledge messages addressed to itself, and not any messages which were addressed to any group callsign."

Does this mean that some arbitrary "callsign" is chosen as a "group callsign" and members of the group assign themselves to respond to said callsign? Or, does it mean that a filter list is established and that a message addressed to anyone on the list is read as a message?

Many thanks -

Jim Wagner  
Oregon Research Electronics

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wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM            near Corvallis OR, home of  
ka7ehk@yahoo.com                        Oregon State University  
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## 177. [aprsspec] Query Questions

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 23 Dec 1999 22:49:24 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56574-1999.12.24-00.05.51--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello again, everyone .....

Here are a bunch of questions about queries:

(1) In the former protocol description, it was mentioned that stations responding to a general query respond at "random" times over a 2 minute interval, I believe. This seems to be absent from the new spec. Has it been forgotten, or is it no longer considered important?

(2) Case of query commands is never discussed. Are they always upper case?

(3) In the very first paragraph of the Query chapter on page 61, it says:

"A station may set up a file containing a list of one or more Station Capabilities. These define attributes for the station. When queried for its capabilities, the station responds by transmitting the contents of the file, preceded by the < Data Type Identifier."

Why is it necessary to include implementation-specific language? No file is required. Software could easily be written so that the operator checks boxes in a dialog and responds with a capabilities message derived from the dialog (without a "file" ever being created). I don't feel that this language is appropriate for the specification.

(4) I would like to see directed IGATE and WX queries. To me, they make a lot of sense. For example when I really just want the wx report from a specific Eastern Washington station, why should the network be flooded with a dozen or more useless weather reports? APRSW and APRSI would be ideal.

(5) How is a station to respond to a directed query for which it has no information. For example, suppose that a station is queried for its status, and no status message has been entered? Likewise objects and position.

(6) I would like to see a statement that a station should accept, without crashing, unrecognized query types. This would facilitate expansion of the query list while insuring that existing software does not balk at the new types.

(7) The format does not indicate HOW a station is to respond if it has not heard a the station specified in an APRSH query.

(8) The format does not indicate HOW a station is to repsond to an APRSD query if it has heard NO direct stations.

(9) The format does not indicate HOW a station is to repsond to an APRSM query if it has no unacknowledged or undelivered messages for the querying station.

(10) How is an APRST query to be answered in the light of WIDEn-N digis? This is especially significant where the originating station might have used WIDE5-3 in its unproto digi list.

Thanks for considering these items....

Jim Wagner  
Oregon Research Electronics

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## 178. [aprsspec] Weather format

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Thu, 23 Dec 1999 22:54:12 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-56578-1999.12.24-00.09.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings again...

Sorry for this flood of questions. I've been on a trip and spent a lot of time spec reading!

Suppose that one wants to make a manual weather report, say hourly rain during a bad storm. What is used for the software type and equipment type? Its not RSW, its not any of those fancy things. Its a plain old rain gauge. I can visualize a number of other params also.

And, not only is there no "software type" or equipment unit specifier, there is no wind direction or speed or any of those other things.

How should this kind of thing be handled???

Again, thanks.

Jim Wagner  
Oregon Research Electronics

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wagnerj@proaxis.com           Tangent, Oregon 97389  
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ka7ehk@yahoo.com           Oregon State University  
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## 179. [aprsspec] Data Type Identifiers

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 23 Dec 1999 22:58:58 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-56579-1999.12.24-00.14.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello again,

On page 16, the ICQ messaging is given the netname APICxx. Yet, nowhere is ICQ discussed.

Should this be given a "future" designation?

Thanks.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
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## 180. [aprsspec] GENERAL: APRS Interoperability

From: Tim Salo <salo@networkcs.com>  
Date: Tue, 28 Dec 1999 17:02:22 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-57040-1999.12.28-17.17.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I finally completed my first pass through the latest draft of the APRS Protocol Reference document.

My primary observation is that Ian had done a tremendous job in compiling and editing the information about the APRS protocol contained in this document. We all owe Ian our gratitude for taking on this task.

My secondary observation is that I am not confident that the information is precise enough to enable me to unambiguously determine whether a specific implementation conforms to the APRS protocol specification. The following thoughts might be useful.

- o I suggest that language be added similar to: "The primary objective of this document is to foster the development of interoperable implementations of the APRS protocol." This notion will help us judge whether the document is complete, both now as we review the document and in the future as implementations and test suites are developed against the document.
- o I suggest that language be added to define a "conformant" APRS implementation. Perhaps, "An APRS implementation is said to 'conform' to this protocol reference if it exhibits all of the behaviors that are labeled as "must" and exhibits none of the behaviors labeled as "must not". This statement implies that the terms "must" and "must not" need to be used carefully, but I suppose that is what is necessary to achieve the interoperability objective.
- o Stated in the converse, I assume that if I create an APRS message that conforms to the protocol reference, and if an APRS implementation fails to properly receive that message, then this APRS implementation does not conform to the specification. (See, for example, RFC 1025, "TCP and IP bakeoff".)
- o I suggest that language be added that says that this document is the ultimate specification of the APRS protocol. In particular, any differences between this document and existing implementation or APRS certification test suites must be resolved in favor of the (possible amended) APRS protocol reference.
- o It may be helpful to specify the minimum behavior that an APRS

implementation must exhibit to be considered a conformant implementation. For example, must a conforming APRS implementation be able to send all of the specified message types? Only some? Which ones? Receive all of the message types? Receive any of the message types, (e.g., a tracker)? What does it mean to "receive" a message, (simply not blow up)?

o I would consider replacing all unqualified uses of the term "APRS" terms such as "APRS system", "APRS station", "APRS network" or "APRS protocol". More precise use of these terms may help clarify which components are responsible for specific behaviors.

-tjs

---

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---

## 181. [aprsspec] WX temp reporting

From: Richard <[richard@ontario.aprs.net](mailto:richard@ontario.aprs.net)>  
Date: Wed, 29 Dec 1999 15:27:32 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-57140-1999.12.29-14.47.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-57140-1999.12.29-14.47.44--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----

Anybody know how temperatures are sent using native APRS format?  
I assume it is t-01 though t-99, but I like to check first.

--

Richard, VE3UNW  
<http://cpu1894.adsl.bellglobal.com>  
<http://ontario.aprs.net>  
<http://cpu1894.adsl.bellglobal.com/richard.asc> PGP Public Key

"Each rhyme I regard"  
- Hiram Edgar Cheery, from "Dreamy High Career", 1999

-----BEGIN PGP SIGNATURE-----  
Version: PGPfreeware 5.0i for non-commercial use  
MessageID: kxBkFdGgXAG5Jxw14qT44nM7o2+noUJa

iQA/AwUBOGphtA0jYzRcDawyEQJgHQCdHQR4Gz124MgRcKGXT5ecSs4RPU4AoKM0  
vKRZ3Z2LTcj14yyoTGP59jL  
=iuCU  
-----END PGP SIGNATURE-----

---

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---

## 182. [aprsspec] Re: Weather format

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 30 Dec 1999 17:30:23 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-57328-1999.12.30-16.47.02--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-57328-1999.12.30-16.47.02--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Thu, 23 Dec 1999, Jim Wagner wrote:

> And, not only is there no "software type" or equipment unit specifier,  
> there is no wind direction or speed or any of those other things.  
>  
> How should this kind of thing be handled???

All values may have "null" values. Just enter SPACES, or DOTS...  
I prefer dots as in T...R...P... etc....

Bob

---

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---



## 183. [aprsspec] Re: Query Questions

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 30 Dec 1999 17:35:59 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-57329-1999.12.30-16.52.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 23 Dec 1999, Jim Wagner wrote:

> (4) I would like to see directed IGATE and WX queries. To me, they make a  
> lot of sense. For example when I really just want the the wx report from a  
> specific Eastern Washington station, why should the network be flooded with  
> a dozen or more useless weather reports? APRSW and APRSI would be ideal.

Since the original "complete" WX report is just part of the stations  
POSIT, the Query POSIT will always get you a complete WX report from any  
APRSdos or other software reporting in the "complete" format. Software  
that uses the "positionless" WX format should respond to the POSIT query  
with both a POSIT and a "positionless" WX packet.

> (10) How is an APRST query to be answered in the light of WIDEn-N digis?  
> This is especially significant where the originating station might have  
> used WIDE5-3 in its unproto digi list.

Same as any other. It just sends back a copy of the packet header "as  
received".

Bob

---

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---

## 184. [aprsspec] Re: Message Questions

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 30 Dec 1999 17:40:11 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-57330-1999.12.30-16.56.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 23 Dec 1999, Jim Wagner wrote:

> In the description of Messsage Acks on page 58, it says nothing about ack  
> timing. Is ACK sent once for each message received or are multiple ACKs  
> sent?

On the APRSSPEC list, I posted a suggested additional paragraph describing  
all the various ACK techniques currently in use to improve ACK  
reliability.

> [Concerning MESSAGE GROUPS]

> Does this mean that some arbitrary "callsign" is chosen as a "group  
> callsign" and members of the group assign themselves to respond to said  
> callsign?

They dont "respond" other than capturing that message as if it were to  
them. (with no ACK)

> Or, does it mean that a filter list is established and that a  
> message addressed to anyone on the list is read as a message?

No. The former...

Bob

---

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---

## 185. [aprsspec] Re: Mic-E ABC bits

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 30 Dec 1999 17:46:48 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-57331-1999.12.30-17.03.01--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Thu, 23 Dec 1999, Jim Wagner wrote:

> Is it required that all one bits in the ABC set be from the same Custom or  
> Standard group?

No

>

> For example, suppose that "E" were used to indicate Custom and 40 degrees.  
> Would the character for 5 degrees have to be "F" or could it be "U"?

It might be neither. This is why all it takes is ONE byte to have a  
custom bit set to turn it in to a CUSTOM message...

k

Bob

---

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---

## 186. [aprsspec] Re: Mic-E Destination Address detection

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 30 Dec 1999 17:49:11 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-57332-1999.12.30-17.05.19--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Thu, 23 Dec 1999, Jim Wagner wrote:

> How does one distinguish a Mic-E destination address from one of the usual  
> APRS net names?  
>  
> Please don't tell me that the parser has to wait until discovering the  
> message type later in the packet!!!

Yep, you parse the TYPE first. Then you decide whether you need to keep  
the TOCALL data...

> Also, is it correct, as it appears, that if one has any net name filtering  
> on, that most Mic-E packets will be lost?

No, all Mic-E packets are passed through....

Notice that on the Kenwood radios that MESSAGES, however, will use the  
appropriate ALT-NET call and so will be subject to filtering...

Bob

---

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---

## 187. [aprsspec] Re: WX temp reporting

From: Richard <richard@ontario.aprs.net>  
Date: Thu, 30 Dec 1999 22:32:09 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-57364-1999.12.30-21.49.26--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----

Never mind, I got my answer. -01 --> -99 is correct.

On Wed, 29 Dec 1999, Richard wrote:

>Anybody know how temperatures are sent using native APRS format?  
>I assume it is t-01 through t-99, but I like to check first.

>

--

Richard, VE3UNW  
http://cpu1894.adsl.bellglobal.com  
http://ontario.aprs.net  
http://richard.unplug.org/richard.asc PGP Public Key  
"Each rhyme I regard"  
- Hiram Edgar Cheery, from "Dreamy High Career", 1999

-----BEGIN PGP SIGNATURE-----

Version: PGPFreeware 5.0i for non-commercial use  
MessageID: a7pLFxQEREWX3TD8JLPxVrOtHKMTJHUC

iQA/AwUBOGwAwOjYzRcDawyEQKKcACgruXTVXh7cTSPx09TIwgbZQhXtWsAnRW3  
GikZU65lR1uuGSARNqPyG176  
=7wfF  
-----END PGP SIGNATURE-----

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## 188. [aprsspec] leave-aprsspec-11602B@lists.tapr.org

From: kf4chg <[kf4chg@atlantic.net](mailto:kf4chg@atlantic.net)>  
Date: Fri, 31 Dec 1999 09:48:20 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-57428-1999.12.31-08.54.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
[leave-aprsspec-11589P@lists.tapr.org](mailto:leave-aprsspec-11589P@lists.tapr.org)

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# January 2000

Original source file: aprsspec.0001

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssid/aprssid/mail\\_archive/aprssid.0001](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprssid/mail_archive/aprssid.0001)

## 1. [aprssid] FW: APRS Protocol

From: "Sadowski, Allan" <allan.sadowski@ncshp.org>  
Date: Mon, 3 Jan 2000 16:16:40 -0500  
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>  
Message-ID: <LYR11589-58030-2000.01.03-15.29.23--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I Goofed... should have sent this here instead of APRS SIG... well, I admit I make mistakes and am willing to both admit it and make an effort to rectify them....

> In the spirit of the new century (yeah... I know it REALLY doesn't start  
> till next year) and because I was out of the country for the EXTREMELY  
> SHORT comment period.... I'd like to add my 2 cents and advocate nothing  
> but SI units for any NEW or changed protocol values. Also, that there be  
> a stated "INTENT" by "AUTHORS" to migrate everything to SI.... In my  
> review I certainly see the various different archaic and North American  
> concentric measurement usage's as a hindrance for the rest of the world,  
> and given the technical nature of Amateur Radio... (heck it's 80 meters, 2  
> meters... Megahertz all SI - even here in this part of North America) it  
> would appear to be an appropriate forward leaning approach to "doing  
> business". It might also appear to be of benefit to evolve to a protocol  
> that isn't so constrained by the multiplicity of proprietary hardware data  
> formats... that this "Protocol" should evolve to be vendor neutral... at  
> the source/origin the data structure should be rationalized to conform to  
> a simple vendor neutral SI compliant standard that doesn't have to  
> proprietarily encode AND IDENTIFY the vendor generating the data  
> structure. Given the likelihood of vendors changing their hardware,  
> software, data structure, or even getting out of a particular product line  
> (or going out of business)... it's foreseeable that in the not too distant  
> future we'll run out of variant identifiers....  
>  
> We have the current usage... nothing can change that... and kudo's to  
> those who made a good effort to make APRS something good... but as we  
> evolve and expand... let us be more in tune with the rest of the planet -  
> a vendor neutral SI compliant Protocol..... please. . . . .  
>  
> ALOHA  
> AH6LS

---

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## 2. [aprssid] Unclear text

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Wed, 5 Jan 2000 00:30:56 -0700  
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>  
Message-ID: <LYR11589-58352-2000.01.05-01.46.55--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings -

In my copy of APRS101g.pdf, at the bottom of page 39 concerning Mic-E encoding/decoding, the very last line reads:

3. subtract 80 if 180 B D D 189.

This is displayed on a Mac. I suspect that font-substitution has messed it up. Is it supposed to read

3. subtract 80 if 180 <= D <= 189 ?

If so, I would suggest the use of either (a) more universal font or (b) the avoidance of non-ASCII characters.

There are similar problems throughout the top half of the next page, page 40.

And, we also have the problem previously reported: The character used to signify "Current GPS Data" at the bottom of page 39 (and a few other pages) does not correspond to any character in the ASCII table, appendix 3. That is, if you copy that character into the Acrobat Find dialog, then search for other instances of that character, there is no instance of that

character in Appendix 3! Yes, someone told me what that character is, but the Appendix 3 does need correction.

Which brings up a final question:

Just what is meant by "Old GPS data" and "Current GPS data"? Does "old" refer to data which is more than some specific age? If so, what age? Please clarify in the text. What is the expected software behavior with "Old GPS Data". It can certainly be valid if its in a vehicle that has not moved since it was Current GPS data, if that, in fact, is what it is supposed to represent.

Many thanks....

Jim Wagner  
Oregon Research Electronics

```
-----
wagnerj@proaxis.com      Tangent, Oregon 97389
KA7EHK@KC7KFE.OR.USA.NOAM near Corvallis OR, home of
ka7ehk@yahoo.com         Oregon State University
-----
```

A computer without Windows is like a cake without mustard. - anonymous

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### 3. [aprsspec] Re: Unclear text

From: Ian Wade <[ian@dowrmain.demon.co.uk](mailto:ian@dowrmain.demon.co.uk)>  
Date: Wed, 5 Jan 2000 10:58:35 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-58358-2000.01.05-05.27.21--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR11659-58352-2000.01.05-01.46.55--ian#dowrmain.demon.co.uk@lists.tapr.org>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes

>Greetings -

>

>In my copy of APRS101g.pdf, at the bottom of page 39 concerning Mic-E encoding/decoding, the very last line reads:

>

>3. subtract 80 if 180 B D D 189.

>

>This is displayed on a Mac. I suspect that font-substitution has messed it up.

Has anyone else experienced this (with a Mac or otherwise)? I was particularly careful to include ALL the document's fonts in the PDF file, to ensure complete independence from the PDF reader.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| | |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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### 4. [aprsspec] leave-aprsnews-10226P@lists.tapr.org

From: kf4chg <[kf4chg@atlantic.net](mailto:kf4chg@atlantic.net)>  
Date: Wed, 05 Jan 2000 23:45:47 -0500

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-58521-2000.01.05-22.52.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
leave-aprsnews-10226P@lists.tapr.org

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## 5. [aprsspec] Re:Unclear Text

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 6 Jan 2000 22:55:16 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-58822-2000.01.07-00.11.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Group -

My "complaint" about text originated from Acrobat 3.0. I've never seen any reason to "upgrade" until now. However, that does not invalidate my complaint.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 6. [aprsspec] APRS: Compulsion vs Permission??

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Mon, 10 Jan 2000 20:51:02 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-59675-2000.01.10-22.07.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The APRS standard is a good one. However, there are some areas where the author has some strong differences of opinion. These areas do not involve the protocol, as such. Instead, they involve issues of author and user freedom. These points that I mention may seem nit-picky, or overly confrontative. I intend them as neither. It is simply that when a "you must..." is written into a standard, it becomes just that, compulsory. Where the over-the air protocol is concerned, that is very important. When it has to do with operator choice or author's choice of features, then it should never be in the specs. Yes, to "it is recommended..." or "it is desirable....", but not "you must...". Here are my issues:

=====

On page 9, under the topic of "Net Cycle Time", the standard says: "3. All stations, even fixed stations, should beacon their position at the net cycle time rate. In a stress situation, stations are coming and going all the time. The position reports show not only where stations are without asking, but also that they are still active."

It is the author's opinion that users should be able to control their beacon interval. Software I am writing offers a beacon interval named "Net Cycle" (and thats the default setting). But, it also offers other fixed intervals up to 60 minutes.

=====

On page 58, under the topic of messages, the standard says: "An APRS receiving station can specify special Message Groups, containing lists of callsigns that the station will read messages from (in addition to messages addressed to itself). Such Message Groups are defined internally by the user at the receiving station, and are used to filter received message traffic."

The receiving station will read all messages addressed to ALL, QST or CQ."

That last line does not say "should" or "can"; it says "WILL". The author believes that users have the right to determine which messages they read. Software I am writing accepts all messages, no matter who the addressee is. All messages appear in a "Message Window", if its open. And, if one opens a Message Window later, all messages within the last 24 hours of operation are shown. It is also possible for the operator to request an alert for messages addressed to ALL, QST, and CQ. But, it is the operator's choice whether or not to do this. I defend the operator's right to make this choice.

=====

On page 59, under the topic of bulletins, the standard says: "Users must be alerted on arrival of a new bulletin or announcement."

Again, it is the author's belief that the user should have control over what is seen and what is not. To that end, my program allows the user to choose whether or not to be alerted for either bulletins or announcements. That decision should be up to the user.

=====

Also, on page 59, under the topic of bulletins, the standard says: "A receiving station can specify a list of bulletin groups of interest. The list is defined internally by the user at the receiving station. If a group is selected from the list, the station will only copy bulletins for that group, plus any general bulletins. If the list is empty, all bulletins are received and generate alerts."

Again, I believe that it should be the user's choice to choose whether or not general bulletins will be seen when operating under a group bulletin filter. And, it should be the operator's choice whether or not to be presented with any alert for any conditions. Furthermore, this section describes HOW a bulletin filter list should work, while the author reserves the right to do the filter list as he sees fit.

=====

On page 60, under the topic of National Weather Service Bulletins, the standard says: "APRS recognizes special National Weather Service bulletins with addresses of the form NWS-xxxxx."

I believe that it is up to the software writer to determine whether or not NWS bulletins are recognized. In countries other than the United States, NWS bulletins do not, after all, even exist! I believe that it is my right to include, or not include NWS bulletin recognition; let the user decide in the "marketplace" whether or not this is appropriate!

=====

On page 61, under the topic of Station Capabilities, the standard says: "A station may set up a file containing a list of one or more Station Capabilities. These define attributes for the station. When queried for its capabilities, the station responds by transmitting the contents of the file, preceded by the < Data Type Identifier."

As discussed by this writer previously in the list, the author believes that it is up to the software writer to determine HOW Station Capabilities are managed; it need not be done using an external file.

=====

On page 62, under the topic of Queries, the standard says: "All stations inside the specified coverage circle should respond with a Position Report and a Status Report."

It is the author's belief that station operators should have control over whether or not to respond to queries. To that end, my software allows operators to select a variety of conditions specifying which queries, if any, to respond to.

=====

On page 72, under the topic of Other Packets, the standard says: "Any packet that does not meet any of the formats in this document are assumed to be a status beacon and will show up as status as long as no other properly

formatted status has been received. This allows APRS to accept any UI packet addressed to the typical beacon address to be captured as a status message. Typical TNC ID packets fall into this category."

This statement is immediately contradicted by a later paragraph: "Programs can decide to handle these, or ignore them, but they must be able to process them without ill effects."

Again, consistent with the author's position on earlier points, this matter should be up to the author and the user. My software DOES NOT display ID packets as "status" messages. They are shown in a Log Window, but do not appear in the Status Window. Again, this is a "marketplace" issue.

Jim Wagner  
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-----  
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-----

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## 7. [aprsspec] Re: APRS: Compulsion vs Permission??

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 11 Jan 2000 00:47:55 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-59700-2000.01.11-00.04.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

THE APRS WG will address Jim's concerns, but since Jim has stated that he is producing code that will not abide by the paragraphs he noted in the standard, I think it useful to maybe reply to his comments briefly.

Jim raises some of the usual concerns for author freedom we hear from new authors and it points out how easy it is to look at APRS as a simple list of formats instead of a "communications system". APRS is for tactical real-time communications at special events, or emergencies, or "situations". Users, including late arrivals and newbees to the NET in progress must have a common set of minimum expectations.

I agree, that Jim has found some that may need better wording, but three of them I feel uneasy about:

Imagine how useful Software X stations will be at your scene in your net:

- 1) You cannot send an urgent message to ALL or QST and expect any of Software X users to see it. You cannot ask for radio silence, a quick QSY, or an urgent call to everyone in the net. SoftwareX's users may or may not see the message.
- 2) At an event, or situation, you can make certain assumptions about the "presence" of stations based on their frequent situation reporting (their Posit and STATUS at the minimum net-cycle time. However, Software X stations have decided they will only beacon at a 60 minute or 2 hour or once every 4 hour rate. (Some people even have said once a day is OK!) Thus, they are invisible to the net... possibly until after the crisis is over...
- 3) Net control communicates to most users on the net via general Bulletins. OOPS, except for software X stations who have disabled general bulletins and so are unaware of these urgent announcements to the everyone on frequency.

These would concern me greatly if I were trying to use APRS at a situation...

bob



---

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---

## 8. [aprsspec] Re: APRS: Compulsion vs Permission??

From: "Ev Tupis (W2EV)" <propnet@greeceny.com>  
Date: Tue, 11 Jan 2000 04:48:58 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-59729-2000.01.11-04.05.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob makes a good point. If one plans on associating a future product with the label of "APRS" they must include certain core functionality.

This appears to be outlined in the "Charter of the Working Group":

"APRS, developed by Bob Bruninga, WB4APR, is an Amateur Radio digital infrastructure for realtime and tactical digital communications. It is designed to provide communications during emergencies, but it is recognized to support routine round-the-clock global communications as well. Its applications include mapping, messaging, telemetry, and tracking. It uses a standard protocol over RF links, supplemented by alternate communication methodologies."

If I understand this correctly, this means that one *must* include a full compliment of code to support:

1. communications during emergencies
2. routine global communications
3. mapping
4. messaging
5. telemetry
6. tracking

Programs that exhibit a personality that is in conflict with the above stated purpose of APRS would place themselves in violation of the APRSpec and should not be certified (meaning, I assume, that the term "APRS" could not be referenced anywhere in the discussion or advertisement of the product).

As such, these developers would severely restrict the audience for their product, but - more importantly - failure to build-in this support could, potentially, place human life at risk.

On the other hand...there is no reason to restrict development to the above. There are plenty of folks who want to experiment with digital communications in non-traditional ways (<http://go.to/propnet>). For them, disaster communications is *not* the purpose. They are simply experimenters. *If* one wants to fly the "APRS Banner" in conjunction with software they are developing, they must include core functions. Anything in *addition* to this is "cream".

Of course, this is simply my take on the thread; put this together with \$0.99 and you get a Big Gulp at your corner MiniMarket. :o)

Ev, W2EV

--

PropNET: A digital wireless  
data network designed to  
plot band openings in near  
real-time. Intreagued?  
<http://go.to/propnet>

---

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## 9. [aprsspec] Re: APRS: Compulsion vs Permission??

From: csuprin@mitre.org (Charles Suprin)  
Date: Tue, 11 Jan 2000 11:06:32 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-59758-2000.01.11-10.22.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I have a couple of things to say.

Mapping is not an action of the protocol. Only something which can be done with the data acquired from communicating with this protocol. Now one might want to specify a datum to use to allow meaningful maps but otherwise mapping is not part of the communication chain. For instance

the D7 does not map stations.

As for the certification of a product as APRS, if we are going to look into this, then the standard is going to need to be clearer about what is required and what is optional. Is a piece of software that emulates a Mic-E Not going to be an approved version? Or will it be disqualified because it cannot receive messages and as such cannot notify the user? Is there going to be a special category for the Mic-E? If so is this the right way to write a standard?

Jim has the presented two items in his post. The first is that he disagrees with some of the will and must statements and prefers not to implement them. The second is that he disagrees with some of the should and can statements and therefore will not implement them. The first is an issue with the standard. This is something he needs to work out through the standard body. The second is perfectly allowable under the standard. If the standard body does not like this then the standard should be changed.

Just my 2 pennies.

Charles Suprin

Not comment of my employer.

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## 10. [aprsspec] APRS OSI Model Map needed?

From: "Ev Tupis (W2EV)" <[propnet@greeceney.com](mailto:propnet@greeceney.com)>  
Date: Tue, 11 Jan 2000 12:10:07 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-59772-2000.01.11-11.26.49--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-59772-2000.01.11-11.26.49--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Should the APRSpec include a "Flag Field" that identifies what "OSI Layer" that a particular protocol belongs to?

For instance...

...Identifying the packet-structure that a WX-Warning takes is a different level than what action a program is expected to take when it encounters same. Even then, does the program simply "send an alarm" (leaving the type of alarm up to the programmer?) or is the type of alarm defined as part of the application-level protocol?

Maybe a further definition of the APRSpec's charge is in order? If it is to deal simply with the structure of APRS packets, it seems that the base spec could be significantly simplified.

Let's also not forget that this discussion is v-e-r-y APRS(tm) specific. No other application of UI-Packets seems to be part of the charge of this working group. As such...in many ways, the application is driving the protocol, as opposed to defining an extremely open protocol that opens up UI-Packet application development.

This is not a criticism, simply an observation. and a point for consideration.

Ev, W2EV

--

PropNET: A digital wireless  
data network designed to  
plot band openings in near  
real-time. Intreagued?  
<http://go.to/propnet>

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---

## 11. [aprsspec] Re: APRS OSI Model Map needed?

From: "Mark Doore (K3RAM)" <[md@webtrek.com](mailto:md@webtrek.com)>  
Date: Tue, 11 Jan 2000 17:59:21 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-59839-2000.01.11-17.15.26--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

I have not been following the spec discussion in great detail, but would like to second that there is market for using UI-packets without APRS. There are a couple packages used by ARES/RACES in VA called ARESPACK and ARESDATA which are primarily for messaging and db query. I would am hoping to see these packages rewritten to use UI-packets only in place of current connect-type communication. That would potentially make way for replacing the MD EOC-to-EOC tcp/ip network with a UI network, and would also allow for specific APRS traffic to be gated from 144.390 onto the MD EOC packet freq. Then can network PCs in EOCs to run APRS or ARESPACK or ARESDATA or ..., utilizing a single tnc/radio/freq.

73, Mark/K3RAM

"Ev Tupis (W2EV)" wrote:  
>  
> Should the APRSpec include a "Flag Field" that identifies what "OSI  
> Layer" that a particular protocol belongs to?  
>  
> For instance...  
> ...Identifying the packet-structure that a WX-Warning takes is a  
> different level than what action a program is expected to take when it  
> encounters same. Even then, does the program simply "send an alarm"  
> (leaving the type of alarm up to the programmer?) or is the type of  
> alarm defined as part of the application-level protocol?  
>  
> Maybe a further definition of the APRSpec's charge is in order? If it  
> is to deal simply with the structure of APRS packets, it seems that the  
> base spec could be significantly simplified.  
>  
> Let's also not forget that this discussion is v-e-r-y APRS(tm)  
> specific. No other application of UI-Packets seems to be part of the  
> charge of this working group. As such...in many ways, the application  
> is driving the protocol, as opposed to defining an extremely open  
> protocol that opens up UI-Packet application development.  
>  
> This is not a criticism, simply an observation. and a point for  
> consideration.  
>  
> Ev, W2EV  
>  
> --  
> PropNET: A digital wireless  
> data network designed to  
> plot band openings in near  
> real-time. Intreagued?  
> <http://go.to/propnet>  
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Mark Doore (K3RAM) md@webtrek.com  
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Freqs: 443.450+, 147.225+, 147.540, 444.250+, 445.975, 146.955-  
APRS: 144.390 K3RAM, N3SCU, K3RAM-1, K3JNT  
Web: <http://www.webtrek.com/md>  
My Car at: <http://www.aprs.net:8000/k3ram>  
Ondine's: <http://www.aprs.net:8000/n3scu>  
and Dad's: <http://www.aprs.net:8000/k3jnt>

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## 12. [aprsspec] Re: APRS - Compulsion vs Permission

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Tue, 11 Jan 2000 20:26:26 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-59878-2000.01.11-21.42.44--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Bob -

Your concerns are well noted. However, I hasten to point out, many folks leave their APRS computers on 24 hours per day, whether they are there or

not. Hence, none of these folks are able to respond, personally, in the timely manner you suggest that a "situation" requires. So, what's the difference?? They cannot exercise "net silence".

There are no requirements in the protocol that certain behavior be exercised in certain situations. How can you imply such behavior without explicitly stating it in the protol. Lacking such a protocol statement of behavior, you cannot expect the action you seem to expect (but which I do not).

Would it not be best to have stations that respond automatically, perhaps as a result of certain query requests, rather than expecting undefined personal action by undefined persons who may not be at a keyboard to take the undefined action??

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ka7ehk@yahoo.com           Oregon State University  
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### 13. [aprsspec] Space Weather?

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Tue, 11 Jan 2000 23:24:41 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-59914-2000.01.12-00.40.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings everyone,

On page 16, in the "APRS Data Type Identifiers", there is reference to the APRS data type "." for "Space Weather". Like the reference in the same table to "Shelter Data" ("+"), there is no further discussion of this data type.

Since this document is supposed to represent current practice, should not BOTH "Space Weather" and "Shelter Data" be removed from the table? If folks want these symbols reserved for specific future use, then perhaps the table entries should be "reserved for Space Weather" and "reserved for Shelter Data"?

Many thanks and keep up the great work.

Jim Wagner  
Oregon Research Electronics

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ka7ehk@yahoo.com           Oregon State University  
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### 14. [aprsspec] My Point

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Tue, 11 Jan 2000 23:55:18 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-59917-2000.01.12-01.11.51--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings everyone...

I hope that I have not stirred things up too much. That was not my intention.

My intention was, and is this: If certain operational features are going to be required for stations (not software, but stations) in an APRS environment, then it MUST be spelled out in the standard. The following statement from the charter of the working group has been quoted:

"APRS, developed by Bob Bruninga, WB4APR, is an Amateur Radio digital infrastructure for realtime and tactical digital communications. It is designed to provide communications during emergencies, but it is recognized to support routine round-the-clock global communications as well. Its applications include mapping, messaging, telemetry, and tracking. It uses a standard protocol over RF links, supplemented by alternate communication methodologies."

Unfortunately:

(1) This is not part of the standard, and it's the standard that counts, not the charter.

(2) Nothing I have seen guarantees STATION performance, even with software written by Mr. Bruninga. It depends on action by the station operator, and if there is no operator present, then performance will fail.

If specific station behavior is to be required in order to operate under the banner of "APRS", then that behavior MUST be spelled out in the standard. Otherwise, it becomes a personality game - who's software gets the stamp of approval and who misses? You MUST NOT stop at mere software performance; you MUST spell out what has to be done by all operating stations.

Very sincerely, I do not believe that the performance described by Mr. Bruninga is achievable with software written by anyone at the present time. It depends on operators. If emergency communication is the penultimate goal, as Mr. Bruninga seems to suggest, then it seems appropriate to me that this draft should be shelved, immediately, and the group should proceed with all due haste to design the protocol enhancements required to achieve this.

Here is an example of something that might achieve this: A query or other message requiring all APRS stations to change, automatically, to "disaster mode" (with a well-stated set of operating requirements). Perhaps there could be several "event levels" ranging from "disaster" (with one set of requirements) to "warning" to "event" to "normal". I would be more than happy to build this, or anything else which would guarantee STATION performance, into software I am writing, so long as it is spelled out in the standard.

Lacking a clear direction to achieve the goal stated in the charter, then the standard should be made more permissive in all matters other than message format.

Sincerely,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of  
ka7ehk@yahoo.com                          Oregon State University  
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## 15. [aprsspec] APRS\*NET button

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 12 Jan 2000 10:08:02 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-59964-2000.01.12-09.28.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Jim,

Your last post hit the nail on the head. I have used the softer term "Common user expectations" in place of your "guaranteed performance", but I think we mean and feel the same objective.

As we evolved from a world of homogeneous APRSdos to an arena with

more software writers it became harder and harder to meet the above objective. Thus as we wrote the SPEC, many of my original "it must" and "it should's" were forced out of the final wording in a spirit of compromise to just "get it out the door".

But your good questions have pointed out the problems that this kind of compromised wording will entail forever in the future... But maybe it might also lead us to a solution...

By now you have seen my suggestion for an APRS\*NET button and I think you independently suggested a similar "disaster mode" which might be the way to help us meet the above objective while also allowing for the more global 99% of the time use of APRS as a general comm tool...

As long as the APRS\*NET BUTTON is "obvious", is the start-up default, and can be easily found by a new user, then I think I am open to ideas on this kind of dual mode of operation...

de WB4APR, Bob

Actually, we dont need to change the 1.0 spec, since it is our attempt to codify exactly this fundamental level of common expectations.. But your suggestions to clean up the language to this intent are good ideas...

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## 16. [aprsspec] Object Behavior

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Wed, 12 Jan 2000 23:31:45 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-60197-2000.01.13-00.48.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60197-2000.01.13-00.48.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Greetings everyone....

What is the expected behavior of an object or item when the transmitting station just stops sending that information without "killing" it? For example, suppose that the station is reporting a thunderstorm location, and loses transmit capability as a result of the storm.

Should the map display fade out over a period of time? Or, should it just go away from the display after some time? If so, what time is reasonable before the fade begins or it disappears? If removal is not automatic, should the operator be able to remove a "stale" object? How would a user be able to know the age (since last transmission) of an object? How is it handled in other programs???

Many thanks to all of you,

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
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## 17. [aprsspec] Message Group Clarification, please...

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Wed, 12 Jan 2000 23:32:20 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-60198-2000.01.13-00.48.43--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60198-2000.01.13-00.48.43--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello .....

Page 58 includes the following statement.....

=====

#### Message Groups

An APRS receiving station can specify special Message Groups, containing lists of callsigns that the station will read messages from (in addition to messages addressed to itself). Such Message Groups are defined internally by the user at the receiving station, and are used to filter received message traffic.

The receiving station will read all messages addressed to ALL, QST or CQ.

The receiving station will only acknowledge messages addressed to itself, and not any messages received which were addressed to any group callsign.

=====

I would like clarification to make sure what is being talked about with respect to "messages addressed to ALL, QST or CQ."

On the surface, it would appear from the location of this paragraph within the document that it concerns a packet of the type:

:ALL :This is an urgent notice to all APRS users in S. Florida

However, we ALSO have "destination callsigns" (page 13) of ALL, QST and CQ. Which are we talking about?

Further, it would seem that there is no functional difference between a bulletin and a "message to ALL". Since (page 59) "Users must be alerted on arrival of a new bulletin or announcement", does not a bulletin have the required effect, making the "ALL-message" superfluous?

Many thanks,

Jim Wagner  
Oregon Research Electronics

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ka7ehk@yahoo.com                        Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 18. [aprsspec] The Genie Effect??

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Wed, 12 Jan 2000 23:33:46 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-60199-2000.01.13-00.50.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, everyone -

My points concerning permission vs requirement of certain APRS operating conditions seems to have stirred a bit of a hornet's nest. Mr. Bruninga alludes to the possibility of not "approving" my software if it does not satisfy the conditions he deems necessary for emergency operation (thus, disallowing use of the trademark "APRS").

However, the genie already seems to be out of the bottle.

For example, the draft standard (page 59) requires: "Users must be alerted on arrival of a new bulletin or announcement".

How can this happen with a unit such as a transmit-only GPS position sender such as a "tracker"? There is no way that the user of such a device can be notified of anything, let alone an APRS bulletin or announcement. How can tracker software use the trademark name "APRS" and be so non-compliant?

More importantly, just what are the standards for approval for use of the trademark "APRS" and who sets those standards? Is it the (soon-to-be published) APRS standard? Or, is there another, never to be published, "standard" in addition to the published one, and existing only in Mr. Bruninga's head? If there is, will that standard be consistent, or will it change according to whether Bob Bruninga happens to "like" the applicant?

This is NOT to put Bob down. His contributions to APRS have been, and continue to be, immense. But, this IS a very important question, not only for me, but for other developers coming along, unless, of course, the intention is to prevent new software from ever being written. I would hope that this is ludicrous, but recent commentary leads me to doubt that it is so.

Here is another, very closely related issue. Suppose that I go ahead with my software as it is presently written. Suppose, just for the sake of discussion, that I call it EPRS (Easy Position Reporting System) instead of the hoped-for easyAPRS. Suppose that I delete all documentation and software references to "APRS" and, instead, simply refer to "the protocol designed by WB4APR". Who is going to keep the two from being used in the same network? Is there an APRS-police which is going to say "this is our private network" and brand-X software is not allowed? Who, or what, is going to know? Who, or what, is going to enforce it?

Isn't it better to welcome the effort, and attempt, through persuasion and reason, to achieve the highest level of compatibility possible? Then, so long as the over-the-air STATION operation does not conflict catastrophically with other stations, label it "APRS-compatible" and call it good? And, again, who has the final say over whether or not it is "compatible"? And what criteria are to be used to determine this?

These are clearly difficult questions. But, they have to be addressed, because the content of the standards document is going to have a very large effect on the answers to the questions. And, the document contents will have a very big effect on what kind of compatibility there is. As I hope I have pointed out, its not THAT hard to create something that appears fairly compatible, and do it in such a way that it is attractive to users but not call itself exactly "APRS".

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE. OR. USA. NOAM          near Corvallis OR, home of  
ka7ehk@yahoo.com                      Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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---

## 19. [aprsspec] Re: The Genie Effect??

From: "Ev Tupis (W2EV)" <[propnet@greeceny.com](mailto:propnet@greeceny.com)>  
Date: Thu, 13 Jan 2000 03:20:42 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-60210-2000.01.13-02.37.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Jim Wagner wrote:

> My points concerning permission vs requirement of certain APRS operating  
> conditions seems to have stirred a bit of a hornet's nest. Mr. Bruninga  
> alludes to the possibility of not "approving" my software if it does not  
> satisfy the conditions he deems necessary for emergency operation (thus,  
> disallowing use of the trademark "APRS").

Hi Jim,  
To be fair, unless you received personal communication from Bob, it was me that suggested that certain functions be present in developed software, lest denial of the APRS trademark.

That was pure conjecture on my part. The APRS Working Group is still hot-and-heavy doing what they are doing. A future phase is the



establishment of a "Certification Process". That hasn't been done yet, and doubt the details of your eMail have even been considered. (again, conjecture on my part)

Don't underestimate brand-name recognician in your quest to develop software. APRS is well known (and more so every day) in the US. If you are looking to market a successful product, I'm sure you've considered the need to be directly associated with such a well known application. By the same token, because APRS is so well known, it becomes important to document its' definition (the work of the APRSwg) so as to assure the highest quality of its implementation.

Keep thinking outside of the box. It sounds like you've got some ideas that may really take off once the APRSpec has been defined!

Regards,

Ev, W2EV

--

PropNET: A digital wireless  
data network designed to  
plot band openings in near  
real-time. Intreagued?  
<http://go.to/propnet>

---

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---

## 20. [aprsspec] RE: Object Behavior

From: "Sadowski, Allan" <[allan.sadowski@ncshp.org](mailto:allan.sadowski@ncshp.org)>  
Date: Thu, 13 Jan 2000 08:56:40 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-60232-2000.01.13-08.09.11--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60232-2000.01.13-08.09.11--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

JIM

EXCELLENT question... that I brought up as a wish/desire in the past... that if you didn't hear from a plotted object/station within a time "window" it would gray out... and then at a second time threshold it would disappear... example... at two hours no new packets.. a plotted object/station would have it's icon go to gray... after 24 hours it would disappear from the screen....

Didn't result in much in the way of comments or feedback (other than a comment from one author that it would be implemented in the next version... and that's a half dozen versions back).. but hey... I didn't pay a whole heck of a lot for the versions I use....

Still... glad to see someone else see's the benefit/utility...

ALOHA  
AH6LS

> -----Original Message-----

> From: Jim Wagner [SMTP:[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)]

>

> What is the expected behavior of an object or item when the transmitting  
> station just stops sending that information without "killing" it? For  
> example, suppose that the station is reporting a thunderstorm location,  
> and

> loses transmit capability as a result of the storm.

>

> Should the map display fade out over a period of time? Or, should it just  
> go  
> away from the display after some time? If so, what time is reasonable  
> before

> the fade begins or it disappears? If removal is not automatic, should the  
> operator be able to remove a "stale" object? How would a user be able to  
> know the age (since last transmission) of an object? How is it handled in  
> other programs???

>

>

---

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---

## 21. [aprrspec] Re: Object Behavior

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 13 Jan 2000 09:17:49 -0500 (EST)  
To: "APRS Spec Discussion List" <aprrspec@lists.taprr.org>  
Cc: APRS Spec Discussion List <aprrspec@lists.taprr.org>  
Message-ID: <LYR11589-60238-2000.01.13-08.36.25--lyris.aprrspec#taprr.org@lists.taprr.org>  
Rendered body type: text/plain

On Wed, 12 Jan 2000, Jim Wagner wrote:

> What is the expected behavior of an object or item when the transmitting  
> station just stops sending that information without "killing" it? For  
> example, suppose that the station is reporting a thunderstorm location, and  
> loses transmit capability as a result of the storm.

Following responses for APRSdos:

> Should the map display fade out over a period of time? Or, should it just go  
> away from the display after some time? If so, what time is reasonable  
> before the fade begins or it disappears?

APRSdos fades any old STATION or OBJECT to dark gray 2 hours after last receipt (or time of OBJ/STN)

> If removal is not automatic, should the  
> operator be able to remove a "stale" object?

Yes, APRSdos lets stations kill any Station or Object from the map. But if the originator is still transmitting it, then it will re-appear

ALSO, there is a format for "Killing an object from everyone's system". This can only be done by the originating station of that Object.. Although anyone can take over reporting responsibility for any object, and once he has the responsibility, then he can kill it too... This is so someone else can globally kill someone else's long-dead object...

Once killed (in APRSdos), it still remains in all lists, but is marked as a KILLED object...

> How would a user be able to know the age (since last transmission) of  
> an object? How is it handled in other programs???

All Objects have a time stamp. (You are right, that you don't know when such object was actually received last, unless you also keep a TIME HEARD). APRSdos used to keep both times, (ORIGINATORS TIME STAMP) and HEARD TIME STAMP). But since 50% of everyone's PC's were on the wrong date, time or time zone, I removed this about 3 years ago and now only keep one time stamp...

Bob

---

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---

## 22. [aprrspec] Re: Message Group Clarification, please...

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 13 Jan 2000 09:27:55 -0500 (EST)  
To: "APRS Spec Discussion List" <aprrspec@lists.taprr.org>  
Cc: APRS Spec Discussion List <aprrspec@lists.taprr.org>  
Message-ID: <LYR11589-60241-2000.01.13-08.44.40--lyris.aprrspec#taprr.org@lists.taprr.org>  
Rendered body type: text/plain

On Wed, 12 Jan 2000, Jim Wagner wrote:

> I would like clarification to make sure what is being talked about with  
> respect to "messages addressed to ALL, QST or CQ." [Example:]  
>  
> :ALL :This is an urgent notice to all APRS users in S. Florida

YES....

> However, we ALSO have "destination callsigns" (page 13) of ALL, QST and CQ.  
> Which are we talking about?

The former. The fact that we also include ALL, QST, and CQ in the

"destinatino callsign list" is for backwards compatibility to conventional packet where CQ, for example is the default CALL for some TNC manufacturers and QST is used often from SAREX and MIR for BEACONTEXTS... We added ALL just as a third possibility...

> Further, it would seem that there is no functional difference between a  
> bulletin and a "message to ALL". Since (page 59) "Users must be alerted on  
> arrival of a new bulletin or announcement", does not a bulletin have the  
> required effect, making the "ALL-message" superfluous?

Here is the difference in APRSdos.

When an APRSdos user gets a new message, whatever he is doing is interrupted with an overlayed MY MESSAGES window. He must look at this before he can return to what he is doing. Thus almost guaranteed assurance that he reads his mail instantly.

When APRSdos gets a new Bulletin, he only "hears" "QST" in CW (once). And from then on, after each human keystroke (after every 15 seconds) the letter "B" is also sounded in CW. Thus, he is alerted to arrival of a new Bulletin, until he reads it, but it is not thrown in his face...

Hope that helps show the difference.

---

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## 23. [aprsspec] Re: The Genie Effect??

From: Jeff King <jeff@aerodata.net>  
Date: Thu, 13 Jan 2000 14:01:52 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-60285-2000.01.13-13.17.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Few comments. Also note I am only speaking my impressions on these issues.

Jim Wagner wrote:

> My points concerning permission vs requirement of certain APRS operating  
> conditions seems

Maybe I am oversimplifying things, but haven't you been asking for both a protocol document AND a operations guide? That in fact, your suggesting these two documents NOT be joined at the hip, so to speak? To me, it seems more the analogy between the FCC rules ("protocol") and the ARRL operating guide. Seems like a good division, if that is what you are suggesting. Is it?

> to have stirred a bit of a hornet's nest. Mr. Bruninga  
> alludes to the possibility of not "approving" my software if it does not  
> satisfy the conditions he deems necessary for emergency operation

So what? There are already a number of "unapproved" versions of APRS compatible display programs out there. You might not be invited to sit on the APRS-WG, but if you can live with that, code away. I'm not suggesting you NOT be compatible with the spec, but I also don't think this is going to make or break your product. You need to recognize a unfilled need, then fill it, for any product to be successful. This has already been borne out by more then one "uncertified" APRS compatible product (in fairness, I'm sure most of them will be become certified once it is available.... but the point is you don't have to wait for the APRS-WG to do something).

> (thus,  
> disallowing use of the trademark "APRS").

Bob OWNS that trademark. It is his to do with as he pleases... if he doesn't like the color of your car, or the fact you prefer pencils over pens, he doesn't have to license it to you. Its his.

I think your confusing the label "APRS compatible" with "APRS". The WG will issue the "APRS compatible" certifications, while Bob will continue to hold the trademark on APRS. Or so this is how it has been explained in previous documents posted on the TAPR web site.

So, if you want to market a program called "Jim's ham AVL system" and added the logo "APRS-WG certified" you'll need to seek the approval of APRS-WG. The commitment for this procedure has already been put into place. But, if you want to call your program "Jim's EasyAPRS" then you'll need to seek approval from the trademark holder of APRS.

> More importantly, just what are the standards for approval for use of the  
> trademark "APRS" and who sets those standards?

Bob does. He owns this. Nothing to do with this list or the APRS-WG.  
If you want to license it, your best bet is to contract him directly.

> As I hope I have  
> pointed out, its not THAT hard to create something that appears fairly  
> compatible, and do it in such a way that it is attractive to users but not  
> call itself exactly "APRS".

Which has already been done. But your confusing a right of ownership,  
that is, the trademark to APRS, with compatibility to a over the air  
protocol. Two different and distinct issues.

Or am I completely confused here (not that I wasn't already)?

-Jeff

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## 24. [aprsspec] FIPS Codes

From: "Paul Manning" <[PMANNING@flint.umich.edu](mailto:PMANNING@flint.umich.edu)>  
Date: Thu, 13 Jan 2000 14:26:33 EDT  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-60335-2000.01.13-13.42.56--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60335-2000.01.13-13.42.56--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello to the group,

I would like to know if the "Spec" will include or support

the use of the: Federal Information Processing System,"FIPS" codes.

These codes are used by NOAA and EAS for addressing specific messages

to counties and states.

These codes could help stations with filtering of APRS

messages.

Paul  
N8VXD

---

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## 25. [aprsspec] Object Report Format description

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Thu, 13 Jan 2000 23:44:46 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-60417-2000.01.14-01.01.57--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60417-2000.01.14-01.01.57--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello group -

There seems to be a small omission in the diagram titled "Object Report  
Format - with Lat/Long position" on page 45.

One of the possible occupants of the 7-character field following the Symbol  
Code is the "Tyy/Cxx" Area Descriptor. Thats not listed in the diagram as  
one of data types which can occupy the field.

Many thanks and best wishes to all....

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 26. [aprsspec] FIPS Codes 2

From: "Paul Manning" <[PMANNING@flint.umich.edu](mailto:PMANNING@flint.umich.edu)>  
Date: Fri, 14 Jan 2000 09:30:21 EDT  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-60452-2000.01.14-08.46.54--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60452-2000.01.14-08.46.54--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

The FIPS code that I refereed to came from the FCC 1994

"Emergency Alert System", E.A.S.,plan (FCC 47 CFR

Part 11.21, "State and Local Area Plans and FCC Mapbook").

State and Territories FIPS codes are listed in this section

of the rules, with Counties listed in a document called

"FCC Map Book".

The FCC used location codes from: "The U.S. Department of  
Commerce National Institute of Standards and Technology  
publication 772".

Paul  
N8VXD

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## 27. [aprsspec] Re: FIPS Codes

From: Keith Sproul <[ksproul@rci.rutgers.edu](mailto:ksproul@rci.rutgers.edu)>  
Date: Fri, 14 Jan 2000 09:34:38 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-60455-2000.01.14-08.58.59--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60455-2000.01.14-08.58.59--lyris.aprsspec#tapr.org@lists.tapr.org)>  
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I have done a bunch of work with FIPS codes and could support them  
very easily, one of the reasons we did not do much with them is not  
easily readable by people because it is all numbers...

Keith

>Hello to the group,  
>  
>  
>I would like to know if the "Spec" will include or support  
>  
>the use of the: Federal Information Processing System,"FIPS" codes.  
>  
>These codes are used by NOAA and EAS for addressing specific messages  
>  
>to counties and states.  
>

>  
>These codes could help stations with filtering of APRS  
>  
>messages.  
>  
>  
>Paul  
>N8VXD  
>  
>---  
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>To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tappr.org

Keith Sproul      ksproul@rci.rutgers.edu      WU2Z  
Student Housing Network Coordinator      732 445-3695 W  
Rutgers University Computing Services      732 821-4828 H

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## 28. [aprsspec] Re: FIPS Codes

From: Paul Keinanen <keinanen@sci.fi>  
Date: Fri, 14 Jan 2000 20:28:16 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tappr.org>  
Message-ID: <LYR11589-60500-2000.01.14-12.42.56--lyris.aprsspec#tappr.org@lists.tappr.org>  
Rendered body type: text/plain

On Fri, 14 Jan 2000 09:34:38 -0500, Keith Sproul  
<ksproul@rci.rutgers.edu> wrote:

>I have done a bunch of work with FIPS codes and could support them  
>very easily, one of the reasons we did not do much with them is not  
>easily readable by people because it is all numbers...

If I understand correctly, these are very US specific codes. Are they  
used anywhere else ?

These are of course OK as an optional feature, but I guess that the  
rest of the world would protest if these features would be required  
for some kind of APRS certification.

Paul OH3LWR

>>Hello to the group,  
>>  
>>  
>>I would like to know if the "Spec" will include or support  
>>  
>>the use of the: Federal Information Processing System,"FIPS" codes.  
>>  
>>These codes are used by NOAA and EAS for addressing specific messages  
>>  
>>to counties and states.  
>>  
>>  
>>These codes could help stations with filtering of APRS  
>>  
>>messages.  
>>

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## 29. [aprsspec] Re: APRS: Compulsion vs Permission??

From: Tim Salo <salo@networkcs.com>  
Date: Fri, 14 Jan 2000 16:15:47 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tappr.org>  
Message-ID: <LYR11589-60542-2000.01.14-16.32.12--lyris.aprsspec#tappr.org@lists.tappr.org>  
Rendered body type: text/plain

> Date: Mon, 10 Jan 2000 20:51:02 -0700  
> From: Jim Wagner <wagnerj@proaxis.com>  
> Subject: [aprsspec] APRS: Compulsion vs Permission??  
>  
> The APRS standard is a good one. However, there are some areas where the

> author has some strong differences of opinion. These areas do not involve  
> the protocol, as such. Instead, they involve issues of author and user  
> freedom. These points that I mention may seem nit-picky, or overly  
> confrontative. I intend them as neither. It is simply that when a "you  
> must..." is written into a standard, it becomes just that, compulsory.  
> Where the over-the air protocol is concerned, that is very important. When  
> it has to do with operator choice or author's choice of features, then it  
> should never be in the specs. Yes, to "it is recommended..." or "it is  
> desirable....", but not "you must...". Here are my issues:  
> [...]

Yes, the APRS protocol document is, in some sense, a specification of the APRS protocol plus all sorts of prescriptive language about how the user interface ought to work plus some implementation suggestions.

In the long term, I believe that attempts control the user interface (e.g., an APRS station must generate this sort of alert on reception of this sort of packet) will be difficult. I believe that a lot of users want control over these features (e.g., want to turn them off), and I believe some developers will address these desires.

Again, I think that the APRS protocol specification, user interface "requirements", and implementation suggestions ought to be clearly separated. Personally, I believe that this objective would be much easier to achieve if more than one document were created.

-tjs

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### 30. [aprsspec] Re: The Genie Effect??

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Sat, 15 Jan 2000 17:08:12 -0600 (CST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-60709-2000.01.15-17.24.39--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-60709-2000.01.15-17.24.39--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> Date: Wed, 12 Jan 2000 23:33:46 -0700  
> From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
> Subject: [aprsspec] The Genie Effect??  
>  
> My points concerning permission vs requirement of certain APRS operating  
> conditions seems to have stirred a bit of a hornet's nest. ...  
>  
> For example, the draft standard (page 59) requires: "Users must be alerted  
> on arrival of a new bulletin or announcement".  
>  
> How can this happen with a unit such as a transmit-only GPS position sender  
> such as a "tracker"? There is no way that the user of such a device can be  
> notified of anything, let alone an APRS bulletin or announcement. How can  
> tracker software use the trademark name "APRS" and be so non-compliant?

I believe that it would be useful for the APRS protocol spec to define several classes of APRS stations (e.g., GUI station, tracker, weather station, etc.) and identify the behavior that is expected of each of these classes of APRS stations (e.g., trackers probably don't need to ack messages, [or, then again, maybe they should to prevent the sender from needlessly retransmitting...]).

While it is another topic altogether, good conformance tests or certification tests are very difficult to develop, even for a mature, very precisely written protocol specification. Long ago I was associated with an X.25 certification test. After we pulled out the X.25 Recommendation and argued a while about whether "may" meant the DTE could decide or the DCE could decide, the certification organization (the DoB, I think), more or less threw up their hands and admitted that we had pretty good X.25 software.

I also believe that things work better if the conformance or certification tests are derivative and the protocol specification primary.

-tjs

---

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### 31. [aprsspec] Re: The Genie Effect??

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 15 Jan 2000 19:12:17 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-60719-2000.01.15-18.29.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 15 Jan 2000, Tim Salo wrote:

> I believe that it would be useful for the APRS protocol spec to define  
> several classes of APRS stations (e.g., GUI station, tracker, weather  
> station, etc.) and identify the behavior that is expected of each  
> of these classes of APRS stations

Yes, Tim, I think this is a good suggestion. It will help discriminate the issues and keep us from arguing to the lowest common denominator...

Other classes might be TELEMETRY station, DIGIPEATER, HF GATE, and IGate... any others?

Bob

---

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---

### 32. [aprsspec] Description of Object Format

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Sun, 16 Jan 2000 13:48:07 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-60866-2000.01.16-15.04.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings -

As many of you know, I am in the middle of creating a new APRS program. This has lead me to look at these descriptions very carefully, because that is all I have to work with (plus, of course, the great comments here on the list).

In the section on Objects and Items, the very first paragraph includes the sentence:

Object reports are identical to posit reports, except that the Position Report is preceded by a fixed 9-character Object name.

I don't think that is true. A position report can include wind direction and speed in the Extended Data field but I don't think that this is allowed for Object. Conversely, an Object can include an area descriptor in the Extended Data, but I don't think that a position report can. Or, am I wrong?

In the description of the Item Format, it says:

Items are the same as APRS Objects, except that the Data Type Identifier is a ), there is no time stamp, and the Item name is variable length from 3 to 9 bytes followed by the standard ! format position.

But, is it really the same as an Object? There is no mention of including an area descriptor for Items, though it would seem to make sense to do so.

Related to this, here are some questions about Objects and Items:

(1) Why no "Killed Item"?

(2) To Kill an object, what degree of match is required? Name only? Name and position? Name and position and extended data? Name and position and extended data and comment?

(3) What degree of match is required for an Object/Item replacement to occur? Name only? Name and position?

(4) Is altitude coding allowed in comment text for Object/Item?

The latter question leads to the following suggestion:

I would like to see a short chapter on the data that can be embedded in the



comment field. Examples include altitude and beam heading and position. There are probably others, but they tend to be scattered and buried, making them difficult to pick out unless you are a very careful reader. If you are simply trying to answer the question: "What do I need to specially decode from the comment field?", its hard to find.

Thanks to everyone, and specially the Technical Editor, Ian Wade, G3NRW, who have made this all possible.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

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### 33. [aprsspec] Area Icon??

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sun, 16 Jan 2000 16:07:26 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-60881-2000.01.16-17.24.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings everyone -

Very brief question, I hope: Since the Object icon is used to denote an "area", how is the icon for an area to be designated? By the SSID, perhaps? If so, that does not leave much choice!

For example, I can see that it would be very desirable to use an area descriptor for a hurricane. Yet, there are no weather-related SSID-specific icons.

Many thanks -

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
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---

### 34. [aprsspec] Area Icon?? more

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sun, 16 Jan 2000 16:11:09 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-60883-2000.01.16-17.27.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In the note just sent, I inquired about specifying the icon for an area object. I asked whether or not one needed to fall back on the SSID.

But, now I read at the bottom of page 15 that if there is a symbol code present, the SSID must be ignored as far as icon representation is concerned. If that is so, then not even SSID is available to tell us what icon to use for an area. Or, am I missing something (again)?

Many thanks, again,

Jim Wagner

Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of  
ka7ehk@yahoo.com                      Oregon State University  
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## 35. [aprsspec] Re: Description of Object Format

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 16 Jan 2000 18:36:25 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-60886-2000.01.16-17.53.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 16 Jan 2000, Jim Wagner wrote:

> Object reports are identical to posit reports, except that the Position  
> Report is preceded by a fixed 9-character Object name.  
>  
> I don't think that is true. A position report can include wind direction  
> and speed in the Extended Data field but I don't think that this is allowed  
> for Object. Conversely, an Object can include an area descriptor in the  
> Extended Data, but I don't think that a position report can. Or, am I wrong?

Think of an OBJECT as 100% identical to a position report. YOU just take  
off the 9 character call, and then continue parsing it as if it were a  
posit. This is intentional. It allows an OBJECT to be anything a station  
can be. Thus you can place WX objects, Moving objects, DF objects, ANY  
station on the map that cannot report his own position for some reason.

> In the description of the Item Format, it says: >  
> Items are the same as APRS Objects, except that the Data Type Identifier is a  
> ), there is no time stamp, and the Item name is variable length from 3 to 9  
> bytes followed by the standard ! format position.  
>  
> But, is it really the same as an Object? There is no mention of including  
> an area descriptor for Items, though it would seem to make sense to do so.

Yes. Again, wanting to keep everything as general as possible, an ITEM  
is also 100% identical to a POSITION or OBJECT. The only difference is  
that it has a variable length name and no time. Once you get to the  
LATITUDE, from there on it is 100% identical to an object or a position...

> (1) Why no "Killed Item"?

You can. The KILLED object format will KILL any matching HAMED Object,  
station or ITEM. Doesnt matter... Thats why we ask that the software  
only permit the "originator of an OBJECT" to be able to send out the KILLED  
OBJECT for that "named" object/item/posit...

> (2) To Kill an object, what degree of match is required? Name only? Name  
> and position? Name and position and extended data? Name and position and  
> extended data and comment?

A KILLED OBJECT is only a "replacement" object that is marked as "killed".  
It typically has the same object data but with the killed TYPE character.  
Thus it stays on everyone's list (for future reference). But it only  
ceases to be displayed. The Assumption being that NO ONE can ever  
completely cause other's data to vanish. It is simply marked for  
"no-display" so the other stations still have a copy in case it later  
becomes important.

Or, think of it as simply a "replacement" In this case, only the CALL Has  
to match.

> (3) What degree of match is required for an Object/Item replacement to  
> occur? Name only? Name and position?

NAME only. and CASE does matter...

> (4) Is altitude coding allowed in comment text for Object/Item?

SURE. After the first digit of LATITUDE, all of these are identical...

> I would like to see a short chapter on the data that can be embedded in the  
> comment field. Examples include altitude and beam heading and position.  
> There are probably others, but they tend to be scattered and buried, making  
> them difficult to pick out unless you are a very careful reader. If you are  
> simply trying to answer the question: "What do I need to specially decode  
> from the comment field?", its hard to find.

Hope this helps...

de WB4APR, Bob

---

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### 36. [aprsspec] Re: Area Icon??

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 16 Jan 2000 19:38:57 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-60892-2000.01.16-18.55.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 16 Jan 2000, Jim Wagner wrote:

> Very brief question, I hope: Since the Object icon is used to denote an  
> "area", how is the icon for an area to be designated? By the SSID, perhaps?  
> If so, that does not leave much choice!

An area is an area. It just draws the shape. There is no ICON associated with it. Have you ever run APRSdos? 90% of your questions would be immediately obvious if you just tried them in APRSdos...

If you want to draw an area around a hurricane, you just do the normal HURRICAN input and then add anotehr object for the "area" you chose...  
bob

---

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### 37. [aprsspec] Re: Area Icon??

From: Cap Pennell <[cap@cruzio.com](mailto:cap@cruzio.com)>  
Date: Sun, 16 Jan 2000 17:35:13 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-60900-2000.01.16-19.51.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At 07:38 PM 1/16/2000 -0500, Bob Bruninga wrote:

<snip>

>An area is an area. It just draws the shape. There is no ICON associated  
>with it. Have you ever run APRSdos? 90% of your questions would be  
>immediately obvious if you just tried them in APRSdos...  
<snip>

Yes. I've used APRSdos, WinAPRS and APRS+SA. Each has different strengths and weaknesses. I believe at this point it would only be common sense to be thoroughly versed in all these (as well as the proposed protocol) before attempting to create another application, even if using a different operating system. After all, trying them is free. I'd hope for something that combines all their strengths and avoids their weaknesses.

73, Cap KE6AFE

--

Cap Pennell  
Santa Cruz, CA 95062-1002 3658.93N/12200.91W [CM86xx]  
email: [cap@cruzio.com](mailto:cap@cruzio.com) home page: <http://members.cruzio.com/~cap>  
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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### 38. [aprsspec] Weather with position?

From: James Wagner <ka7ehk@yahoo.com>  
Date: Tue, 18 Jan 2000 15:32:24 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61345-2000.01.18-17.48.54--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello Group -

On page 49 of the draft, the following appears:

In addition, where the raw data has been post-processed for example, by the insertion of station location information), the four position Data Type identifiers !, =, / and @ may be used instead. In this case, the Weather Report is identified with the weather symbol /\_ in the APRS Data.

A little later, where "Weather Reports with Time and Position" are discussed on page 51, it says:

Examples of report formats are shown below. Note that the Symbol Code in very case is the \_ (underscore).

The format description leaves the Symbol Table ID character undefined. And, in fact, the Symbol Table on page 84 shows that

/\_ = Weather Station  
\\_ = Weather Site

The question IS:

Should the reference to "weather symbol" on page 49 include both the "/"\_ and "\\_" symbols? Or, should the format description on page 51 be restricted to a Symbol Table ID of "/", only?

Many thanks,  
Jim, KA7EHK

---

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### 39. [aprsspec] Re: Weather with position?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Wed, 19 Jan 2000 10:27:32 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61458-2000.01.19-09.46.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Good question. The combination of "complete" and "positionless" weather in the APRS standard is a bit of a mess, since the resulting "weatherless" position packets necessary to fill in the positions for the "positionless" weather also contains the WX ICON. Thus on receipt of a position packet with the WX icon, your software has to check the WX fields to determine if this is in fact a "complete" WX report or a "weatherless" position packet by context parsing.

This could be solved by using a different ICON for "complete" WX reports and for "weatherless" position reports, but that will have to be an issue for a later rev of the spec...

Good luck, Bob

On Tue, 18 Jan 2000,  
James Wagner wrote:

> Hello Group -

>

> On page 49 of the draft, the following appears:

>  
> In addition, where the raw data has been post-processed  
> for example, by the insertion of station location information),  
> the four position Data Type identifiers !, =, / and @ may be  
> used instead. In this case, the Weather Report is identified  
> with the weather symbol /\_ in the APRS Data.  
>  
> A little later, where "Weather Reports with Time and Position"  
> are discussed on page 51, it says:  
>  
> Examples of report formats are shown below. Note that the  
> Symbol Code in very case is the \_ (underscore).  
>  
> The format description leaves the Symbol Table ID character  
> undefined. And, in fact, the Symbol Table on page 84 shows  
> that  
>  
> /\_ = Weather Station  
> \\_ = Weather Site  
>  
> The question IS:  
>  
> Should the reference to "weather symbol" on page 49 include  
> both the "/"\_ and "\\_" symbols? Or, should the format  
> description on page 51 be restricted to a Symbol Table ID  
> of "/", only?  
>  
> Many thanks,  
> Jim, KA7EHK  
>  
>  
>  
> \_\_\_\_\_  
> Do You Yahoo!?  
> Talk to your friends online with Yahoo! Messenger.  
> <http://im.yahoo.com>  
>  
> ---  
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>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: [wb4apr@amsat.org](mailto:wb4apr@amsat.org)  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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## 40. [aprsspec] Comment field contents

From: James Wagner <[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)>  
Date: Wed, 19 Jan 2000 12:35:09 -0800 (PST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-61512-2000.01.19-14.56.31--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On page 19, in a brief discussion of the contents of  
the comment field, the draft says:

As special cases, the Comment field can also contain:  
□ The bearing and number/range/quality parameters in a DF report.  
□ Storm data.

It does not say (anywhere in this section) that the comment  
field can also contain altitude coding (page 23):

Altitude in Comment Text □ The comment may contain an altitude  
value, in the form /A=aaaaaa, where aaaaaa is the altitude in  
feet. For example: /A=001234. The altitude may appear anywhere  
in the comment.

This seems to me to warrant inclusion not only where it is but  
ALSO in descriptions of the Comment Field. My reasoning is

this: suppose someone (sort of like me) comes along and asks  
"What special things do I need to watch for in the Comment  
Field?" Unless that same person just happens to catch it  
elsewhere in the docs, it will be missed.

Many thanks,  
Jim, KA7EHK

---

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#### 41. [aprsspec] Omni DF Params?

From: James Wagner <[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)>  
Date: Wed, 19 Jan 2000 13:26:10 -0800 (PST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-61519-2000.01.19-15.42.52--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-61519-2000.01.19-15.42.52--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello Group -

The discussion on draft page 26 of Omni-DF Signal Strength  
extension does not say how the characters other than the  
first are derived. Are they the same as the PHG set???

Many thanks  
Jim, KA7EHK

---

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#### 42. [aprsspec] Re: Omni DF Params?

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 19 Jan 2000 16:44:26 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-61523-2000.01.19-16.01.09--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-61523-2000.01.19-16.01.09--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Wed, 19 Jan 2000, James Wagner wrote:

> Hello Group -  
>  
> The discussion on draft page 26 of Omni-DF Signal Strength  
> extension does not say how the characters other than the  
> first are derived. Are they the same as the PHG set???

Yes

---

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---

#### 43. [aprsspec] Re: [aprssig] \$PGRMZ

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Wed, 19 Jan 2000 20:19:22 -0600 (CST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-61559-2000.01.19-20.16.01--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-61559-2000.01.19-20.16.01--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> Date: Tue, 18 Jan 2000 07:59:23 -0700  
> From: Earl Needham <[KD5XB@AMSAT.ORG](mailto:KD5XB@AMSAT.ORG)>  
> Subject: [aprssig] \$PGRMZ  
>  
> Keith was kind enough to include support for \$PGRMZ in the latest version  
> of WinAPRS. ...

Sorry to shoot the messenger, Earl, but...

Is this consistent with the APRS Protocol Reference?

The spec says:

"It is recommended that APRS interprets at least the following NMEA Received Sentence types:

```
GGA    ...
GLL    ...
RMC    ...
VTG    ...
WTP    ..."
```

(First, I assume that the sentence should read something like: "APRS stations SHOULD interpret the following..."; I believe that the term "APRS" is too vague to be used in an unambiguous spec.)

The spec indicates that no conformant APRS station needs to interpret the \$PGRMZ sentence. Sending a packet that implementations aren't expected to interpret doesn't seem wise.

I believe the spec may be silent on whether an APRS implementation may transmit in formats that are not described in the spec, (beyond the "{" user-defined format and perhaps the "'" test format).

The spec does say that

"Altitude may be expressed in two ways:

```
o      In the comment text.
o      In the Mic-E format."
```

Personally, I believe that an important objective of a protocol spec is to promote the development of interoperable implementations. I also believe that an important test of the quality of a protocol spec is whether it is precise enough to ensure that conformant implementations interoperate.

It appears to me that a spec that permits an implementation to transmit whatever formats it chooses is unlikely to be effective in fostering interoperability.

Is the \$PGRMZ listed in spec, but I missed it?

Does the spec need to be more precise in what formats an APRS station may transmit?

Does this new feature conflict with the spirit or the letter of the spec, at least to the extent that, as a non-standard (proprietary) extension, it makes interoperability difficult?

-tjs

---

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---

#### 44. [aprsspec] Re: [aprssig] \$PGRMZ

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Wed, 19 Jan 2000 18:36:33 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61562-2000.01.19-20.33.16--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Tim, maybe I'm wrong, but I do not think you understand. WinAPRS is not transmitting \$PGRMZ, it is interpreting \$PGRMZ and then including Altitude in the on-air transmitted data in APRS format. This is Good Tim. It then provide 3D position, Track and Speed. It is a melding of RMC and RMZ. It does not harm intra-operability at all. I hope you can recall your bullets. Keith will correct me if I'm wrong, then you can shoot me. Brent KH2Z

-----Original Message-----  
From: Tim Salo <salo@networkcs.com>

To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org <aprsspec@lists.tapr.org>  
Date: Wednesday, January 19, 2000 6:19 PM  
Subject: [aprsspec] Re: [aprssig] \$PGRMZ

```
>> Date: Tue, 18 Jan 2000 07:59:23 -0700
>> From: Earl Needham <KD5XB@AMSAT.ORG>
>> Subject: [aprssig] $PGRMZ
>>
>> Keith was kind enough to include support for $PGRMZ in the latest version
>> of WinAPRS. ...
>
>Sorry to shoot the messenger, Earl, but...
>
>Is this consistent with the APRS Protocol Reference?
>
>The spec says:
>
> "It is recommended that APRS interprets at least the following
> NMEA Received Sentence types:
>
> GGA ...
> GLL ...
> RMC ...
> VTG ...
> WTP ..."
>
>(First, I assume that the sentence should read something like: "APRS
>stations SHOULD interpret the following..."; I believe that the term
>"APRS" is too vague to be used in an unambiguous spec.)
>
>The spec indicates that no conformant APRS station needs to interpret the
>$PGRMZ sentence. Sending a packet that implementations aren't expected
>to interpret doesn't seem wise.
>
>I believe the spec may be silent on whether an APRS implementation may
>transmit in formats that are not described in the spec, (beyond the "{"
>user-defined format and perhaps the "" test format).
>
>The spec does say that
>
> "Altitude may be expressed in two ways:
>
> o In the comment text.
> o In the Mic-E format."
>
>
>Personally, I believe that an important objective of a protocol spec is
>to promote the development of interoperable implementations. I also
>believe that an important test of the quality of a protocol spec is
>whether it is precise enough to ensure that conformant implementations
>interoperate.
>
>It appears to me that a spec that permits an implementation to transmit
>whatever formats it chooses is unlikely to be effective in fostering
>interoperability.
>
>Is the $PGRMZ listed in spec, but I missed it?
>
>Does the spec need to be more precise in what formats an APRS station
>may transmit?
>
>Does this new feature conflict with the spirit or the letter of the spec,
>at least to the extent that, as a non-standard (proprietary) extension,
>it makes interoperability difficult?
>
>-tjs
>
>---
```

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>  
>

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#### 45. [aprsspec] Re: [aprssig] Re: \$PGRMZ

From: Tim Salo <salo@networkcs.com>  
Date: Wed, 19 Jan 2000 21:08:07 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-61565-2000.01.19-21.05.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Wed, 19 Jan 2000 21:52:16 -0500  
> To: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>  
> From: Keith Sproul <ksproul@vger.rutgers.edu>  
> Subject: [aprssig] [aprsspec] Re: \$PGRMZ  
>  
> Brent is correct..  
> [...]   
>  
> Brent wrote:  
>  
> >Tim, maybe I'm wrong, but I do not think you understand. WinAPRS is not  
> >transmitting \$PGRMZ, it is Interpreting \$PGRMZ and then including Altitude  
> >in the on-air transmitted data in APRS format. ...

Neat.

I stand corrected.

-tjs

---

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---

#### 46. [aprsspec] Wind speed and direction in Position with WX

From: James Wagner <ka7ehk@yahoo.com>  
Date: Thu, 20 Jan 2000 10:40:42 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61673-2000.01.20-12.37.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Greetings -

On page 24 of the draft, we have the following:

Wind Direction and Wind Speed

The 7-byte DIR/SPD Data Extension can be used to represent the wind direction and sustained one-minute wind speed in a Weather Report. The wind direction is expressed in degrees (001-360), clockwise from due north. The speed is expressed in knots. A slash / character separates the two.  
For example:

220/004 represents a wind direction of 220 degrees and a speed of 4 knots.

If the direction and speed are unknown or not relevant, they are set to 000/000.

Now, for the question:

Is the Direction/Speed extension ALWAYS present if the symbol is /\_ or \\_ ????. If not, how does one distinguish between Direction/speed and (other) weather data. Is the presence of the "/" in character four of the extension field sufficient (when the symbol is /\_ or \\_) ????

Many thanks,  
Jim, KA7EHK

---

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## 47. [aprsspec] Bearing and Number/Range/Quality

From: James Wagner <ka7ehk@yahoo.com>  
Date: Thu, 20 Jan 2000 10:50:46 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61675-2000.01.20-12.47.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, again (and again, and again...)

The draft (page 27) seems to suggest that Bearing and Number/Range/Quality is present ONLY after course/speed data.

Is this a correct interpretation?

Thanks,

Jim, KA7EHK

---

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## 48. [aprsspec] Re: Wind speed and direction in Position with WX

From: Paul Keinanen <keinanen@sci.fi>  
Date: Thu, 20 Jan 2000 21:48:09 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61697-2000.01.20-13.43.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 20 Jan 2000 10:40:42 -0800 (PST), James Wagner  
<ka7ehk@yahoo.com> wrote:

>Greetings -  
>  
>On page 24 of the draft, we have the following:  
>  
>Wind Direction and Wind Speed  
>  
>The 7-byte DIR/SPD Data Extension can be used to represent the wind  
>direction and sustained one-minute wind speed in a Weather Report.

Is this some US specific convention of expressing the wind speed as a  
\_one\_ minute sustained speed ? As far as I know, some other weather  
services uses \_ten\_ minute averages.

If APRS is going to be an international standard, IMHO, then either  
the reference to one minute sustained wind should be removed or  
something should be said about different services using different  
methods of determining the wind.

Paul OH3LWR

---

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---

## 49. [aprsspec] Re: Wind speed and direction in Position with WX

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 20 Jan 2000 15:27:16 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61702-2000.01.20-14.24.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 20 Jan 2000, James Wagner wrote:

> Wind Direction and Wind Speed  
> If the direction and speed are unknown or not relevant, they are set to  
> 000/000.  
>  
> Now, for the question:  
>

> Is the Direction/Speed extension ALWAYS present if the symbol is  
> /\_ or \\_ ??? If not, how does one distinguish between Direction/speed  
> and (other) weather data. Is the presence of the "/" in character  
> four of the extension field sufficient (when the symbol is /\_ or \\_)  
> ???

Thats the problem I referred to in supporting both the weatherless position data and the positionless WX data. In APRSdos, I use the presence of the "g" and "t" fields as the "test" to determine if it is truly WX or if it is just a position report of a WX station without any WX data associated with it. SO, yes, the CSE/SPD/gust and TEMP fields are REQUIRED. If any are missing, then it is probably a WinAPRS weatherless position report of a WX station...

de WB4APR, bob

---

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---

## 50. [aprsspec] Re: Bearing and Number/Range/Quality

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 20 Jan 2000 15:27:37 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61703-2000.01.20-14.24.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 20 Jan 2000, James Wagner wrote:

> Hello, again (and again, and again...)  
>  
> The draft (page 27) seems to suggest that Bearing and  
> Number/Range/Quality is present ONLY after course/speed data.  
>  
> Is this a correct interpretation?

Yes,

---

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## 51. [aprsspec] Re: Wind speed and direction in Position with WX

From: Richard Carter <rcarter@isi.com>  
Date: Thu, 20 Jan 2000 16:23:23 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-61747-2000.01.20-15.22.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Does anyone out there have an electronic copy of the NMEA-183 spec? I have portions of it in printed form, but I'd like to see the whole thing. I'm reluctant to fork over \$75 to NMEA just to peek at their spec. The notes I have indicate that wind speed is reported as an instantaneous velocity, relative to true north, in knots (MWV). I don't know if this is directly related to some recent postings I've read, but it seems that it would be difficult to extend the APRS spec beyond what NMEA defines.

Rich Carter - KE1EV

-----Original Message-----

From: Paul Keinanen [SMTP:keinanen@sci.fi]  
Sent: Thursday, January 20, 2000 2:48 PM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Re: Wind speed and direction in Position with WX

On Thu, 20 Jan 2000 10:40:42 -0800 (PST), James Wagner  
<ka7ehk@yahoo.com> wrote:

>Greetings -  
>  
>On page 24 of the draft, we have the following:  
>  
>Wind Direction and Wind Speed  
>  
>The 7-byte DIR/SPD Data Extension can be used to represent the wind

>direction and sustained one-minute wind speed in a Weather Report.

Is this some US specific convention of expressing the wind speed as a \_one\_ minute sustained speed ? As far as I know, some other weather services uses \_ten\_ minute averages.

If APRS is going to be an international standard, IMHO, then either the reference to one minute sustained wind should be removed or something should be said about different services using different methods of determining the wind.

Paul OH3LWR

---

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## 52. [aprsspec] Weather Icon

From: James Wagner <ka7ehk@yahoo.com>  
Date: Fri, 21 Jan 2000 08:41:32 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-61884-2000.01.21-10.40.23--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Hello Group -

Very recently, I asked whether the symbol characters  
"/\_" and "\\_" were BOTH recognized as indicating a  
Position Report with weather.

Bob responded with some very important information, but  
didn't answer the question. So, I will pose the question  
again.

Does the presence of ANY symbol with a Symbol Code character  
of "\_" in a Position Report make it a "Weather Report"? Or,  
is this true only for symbol "/\_" (Weather Station)?

Many thanks,  
Jim, KA7EHK

---

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## 53. [aprsspec] Re: Weather Icon

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 21 Jan 2000 15:55:54 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-61909-2000.01.21-14.52.51--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Fri, 21 Jan 2000, James Wagner wrote:

> Does the presence of ANY symbol with a Symbol Code character  
> of "\_" in a Position Report make it a "Weather Report"? Or,  
> is this true only for symbol "/\_" (Weather Station)?

All of the following may contain WX in a complete report  
/\_ , \\_ weather station  
/W, \W NWS weather station

In both cases of the alternate "\" symbols, these symbols may have an  
overlay character such as R for a RADAR site, "N" for a site that can also

do WIDEn-n digipeating or "T" for sites that are TRACE only. etc...  
Inotherwords, the alternate symbols are just normal overlay type symbols,  
but are still treated the same...

bob

---

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---

## 54. [aprsspec] What is aprsdev? was: Re: [aprsdev] I Give - how is this happening

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 22 Jan 2000 19:21:10 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-62078-2000.01.22-18.17.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Can someone tell me what the APRSDEV list is? I see no mention of it at  
all on the TAPR list server. How does one gain entry to it?

Thanks

Jeff

Bob Bruninga wrote:  
>On Fri, 21 Jan 2000, Brent Hildebrand wrote:

>  
> > You are currently subscribed to aprsdev as: bruninga@nadn.navy.mil  
> > To unsubscribe send a blank email to leave-aprsdev-8585R@lists.tapr.org

---

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---

## 55. [aprsspec] Re: [arpp] GPL'ed PSK31 source, the next HF "APRS"?

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 22 Jan 2000 22:25:07 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-62113-2000.01.22-21.20.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi Hamish:

Hamish Moffatt wrote:

> My understanding is that BPSK mode in PSK31 has some FEC,  
> but QPSK mode has more (since it has theoretically twice the bitrate).

I went back and checked, and I'm fairly sure there is no FEC in the BPSK  
mode and 2:1 FEC in the QPSK mode. So the actual user speeds are  
the same, with the 2X speed improvement of QPSK being taken up with  
FEC overhead.

Now, I took a look at the varicode tables, and came up with this for  
a good set of short chars for representing digits (which will comprise  
the bulk of transmissions i.e. being lat/lon).

The proper PSK31 representation of digits actually is quite long...  
8 to 9 bits.

| Char  | Length | Could be? |
|-------|--------|-----------|
| SPACE | 1      | 0         |
| e     | 11     | 1         |
| o     | 111    | 2         |
| t     | 101    | 3         |
| i     | 1101   | 4         |
| a     | 1011   | 5         |
| n     | 1111   | 6         |
| l     | 11011  | 7         |
| r     | 10101  | 8         |
| s     | 10111  | 9         |

So for example, your "APRS" broadcast station would sent the  
stations callsign (in standard varicode), then a delimiter, then the  
lat/lon in a compressed code (in this case the shortest varicode letters).

Or another way would be to go with "two digit" representations. Represent 0-99 as a ascii char from 0-99.... I think the average is around 8-9 bits, so you be at least be getting close to matching BCD. So lets say for example you want to represent lat 42.3397. This could be represented at "+!a" in varicode (you dump the decimal place and stay with fixed length). Or even better, offset the varicode by 32 to take advantage of the shorter length of the lowercase letters.

The other advantage of base 100 (as above) is that you dump the waste of two "00"'s between each varicode char.

Or dump varicode altogether, but that might limit initial interest.

Just some thoughts.

-Jeff

---

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---

## 56. [aprsspec] SVR to I-Gate Operators Note:

From: "Dale Huguley" <kg5qd@worldnet.att.net>  
Date: Sun, 23 Jan 2000 15:58:32 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-62196-2000.01.23-09.59.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All-

I am in the process of changing the Data stream coming from the WXSVR parser and need you to add some more call signs to your "Stations.txt" file. An explanation is located at [http://kg5qd.home.att.net/I\\_gate.html](http://kg5qd.home.att.net/I_gate.html)  
This system is more versatile and can be taylored to your local area.

73 de kg5qd Dale

---

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---

## 57. [aprsspec] Re: The Genie Effect??

From: Tim Salo <salo@networkcs.com>  
Date: Sun, 23 Jan 2000 15:21:25 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-62243-2000.01.23-15.18.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Sat, 15 Jan 2000 19:12:17 -0500 (EST)  
> From: Bob Bruninga <bruninga@nadn.navy.mil>  
> Subject: [aprsspec] Re: The Genie Effect??  
>  
> On Sat, 15 Jan 2000, Tim Salo wrote:  
> > I believe that it would be useful for the APRS protocol spec to define  
> > several classes of APRS stations (e.g., GUI station, tracker, weather  
> > station, etc.) and identify the behavior that is expected of each  
> > of these classes of APRS stations  
>  
> Yes, Tim, I think this is a good suggestion. It will help discriminate  
> the issues and keep us from arguing to the lowest common denominator...  
>  
> Other classes might be TELEMETRY station, DIGIPEATER, HF GATE, and  
> IGATE... any others?

A handful of thoughts:

- o Somewhere I started a list that included trackers, GUI stations, non-GUI stations (e.g., HamHUD), stand-alone weather stations, ...
- o It is probably difficult to develop a meaningful list of station types; it probably makes sense to make a list of functions that a station might support. For example, it is probably easier to say that a station contains HF Gateway, Internet Gateway and Digipeater functions than it is to specify a digipeater, a digipeater with

IGate function, a digipeater with HF Gate functions, etc.

- o It may make sense for the spec to read along the lines of "If an APRS-compliant implementation supports this function (e.g., telemetry), this is the way it ought to work...".
- o My guess is that, when it comes down to it, there is no function that all APRS stations need to implement in order to conform to the spec. For example, compare an [APRS compliant] tracker with an [APRS compliant] weather station; I suspect that there is no protocol feature that they must both implement. (Anyone should feel free to make up a bunch of examples to support this assertion, if there is any question...)

-tjs

---

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## 58. [aprsspec] Re: Description of Object Format

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
 Date: Sun, 23 Jan 2000 17:58:45 -0600 (CST)  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Message-ID: <[LYR11589-62260-2000.01.23-17.55.33--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62260-2000.01.23-17.55.33--lyris.aprsspec#tapr.org@lists.tapr.org)>  
 Rendered body type: text/plain

> Date: Sun, 16 Jan 2000 13:48:07 -0700  
 > From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
 > Subject: [aprsspec] Description of Object Format  
 >  
 > As many of you know, I am in the middle of creating a new APRS program.  
 > This has lead me to look at these descriptions very carefully, because that  
 > is all I have to work with (plus, of course, the great comments here on the  
 > list). ...

This is one of the best tests of the quality of a protocol specification: for people to implement from the spec and then test their implementation against other implementations for interoperability. It would be really nice if you wrote up your experiences with the APRS spec when you are done.

(I believe that one of the Pascal standardization efforts (the British Standards Association or some such thing, I think) insisted that only features that had been implemented in a single-pass compiler could be included in the language spec. Contrast this with some language specs that contain features that either can't be implemented or that people can't figure out how to implement in a standard fashion.)

By the way, you may also want to look at the various streams of APRS packets available from [www.aprs.net](http://www.aprs.net). This will help you learn about features not in the APRS spec, such as deprecated features, and some not unusual, but rather odd-ball, packet formats (such as packets that intermix TNC-2 and Timewave/AEA MONitor command output formats).

-tjs

---

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## 59. [aprsspec] REJ vs. ACK

From: "Rob Wittner" <[rmw@rwa-inc.com](mailto:rmw@rwa-inc.com)>  
 Date: Tue, 25 Jan 2000 08:35:46 -0500  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Message-ID: <[LYR11589-62525-2000.01.25-07.31.40--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62525-2000.01.25-07.31.40--lyris.aprsspec#tapr.org@lists.tapr.org)>  
 Rendered body type: text/plain

Hi, Bob... Rob here. (The CE guy.)

I was playing around with messaging on my CE version, and was sending messages to my dosAPRS station downstairs. The dos station has been running unattended for many moons, and had lots of messages and bulletins in the buffers. My messages to my station downstairs were being answered with REJnnn packets. What causes this? (I looked in the spec under messaging, but it's not mentioned. Or, I should say, I didn't see it.) My guess is that the arrays were full, so it was acknowledging the fact that it received the message but was unable to store it. (Right?)

Should this be included in the spec? (My guess is "yes.")

Thanks,

-Rob  
KZ5RW

---

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---

## 60. [aprsspec] Re: REJ vs. ACK

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 25 Jan 2000 09:06:33 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-62530-2000.01.25-08.04.01--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62530-2000.01.25-08.04.01--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Yes, good point. Although all the other APRS versions seem to have unlimited message storage capability, APRSdos does not and resorts to REJ instead of ACK packets. Yes, this should be included in the SPEC in my opinion. IN fact, Kewnood should also have included REJ algorithm since it can only receive 16 messages before it begins losing un-read msgs.

The beauty of it is that noone has to implement it, except the writer that has limited memory. The "sender" software doesn't care, since it will ignore the "REJ" and just keep assuming that the message is undelivered...

Bob

On Tue, 25 Jan 2000, Rob Wittner wrote:

> messages to my dosAPRS station downstairs. The dos station has been running  
> unattended for many moons, and had lots of messages and bulletins in the  
> buffers. My messages to my station downstairs were being answered with  
> REJnnn packets. What causes this? (I looked in the spec under messaging,  
> but it's not mentioned. Or, I should say, I didn't see it.) My guess is  
> that the arrays were full, so it was acknowledging the fact that it received  
> the message but was unable to store it. (Right?)  
>  
> Should this be included in the spec? (My guess is "yes.")  
>  
> Thanks,  
>  
> -Rob  
> KZ5RW  
>  
>  
>  
> ---  
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>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: [wb4apr@amsat.org](mailto:wb4apr@amsat.org)  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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---

## 61. [aprsspec] Kenwood TM-D700A

From: Richard Carter <[rcarter@isi.com](mailto:rcarter@isi.com)>  
Date: Tue, 25 Jan 2000 12:54:55 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-62549-2000.01.25-11.52.13--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62549-2000.01.25-11.52.13--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain



I just purchased a Kenwood TM-D700A. It is a new dual-band mobile unit that is APRS ready. When used in the APRS mode, there appears to be no way to interface the radio to an external computer. I had hoped that the serial port would send data to an external device. I could use it as a simple TNC with external control software, but the available APRS software doesn't support this device. Does anyone have experience with this radio?

Rich Carter - KE1EV

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## 62. [aprsspec] Re: REJ vs. ACK

From: Tony Drumm <[TonyDrumm@bresnanlink.net](mailto:TonyDrumm@bresnanlink.net)>  
Date: Tue, 25 Jan 2000 17:47:41 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-62573-2000.01.25-17.44.54--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62573-2000.01.25-17.44.54--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob,

The D700 does send REJ replies. One of the local D700's was responding with REJ packets. We dug into it to figure out why (and why they went away when he cleared all his messages). This was my guess. It turns out it's documented in the APRS section of the manual. If the messages haven't been read, it won't scroll them off the queue.

Tony

Bob Bruninga wrote:

>  
> Yes, good point. Although all the other APRS versions seem to have  
> unlimited message storage capability, APRSdos does not and resorts to REJ  
> instead of ACK packets. Yes, this should be included in the SPEC in my  
> opinion. IN fact, Kewnood should also have included REJ algorithm since  
> it can only receive 16 messages before it begins losing un-read msgs.  
>  
> The beauty of it is that noone has to implement it, except the writer that  
> has limited memory. The "sender" software doesn't care, since it will  
> ignore the "REJ" and just keep assuming that the message is undelivered...  
>  
> Bob

---

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---

## 63. [aprsspec] Re: REJ vs. ACK

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 25 Jan 2000 23:27:28 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-62600-2000.01.25-22.24.27--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62600-2000.01.25-22.24.27--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Great! That's what I told them to do.. Glad to see they did it that way...

bob

On Tue, 25 Jan 2000, Tony Drumm wrote:

> Bob,  
>  
> The D700 does send REJ replies. One of the local D700's was responding with REJ  
> packets. We dug into it to figure out why (and why they went away when he  
> cleared all his messages). This was my guess. It turns out it's documented in  
> the APRS section of the manual. If the messages haven't been read, it won't  
> scroll them off the queue.  
>  
> Tony  
>  
> Bob Bruninga wrote:  
> >  
> > Yes, good point. Although all the other APRS versions seem to have  
> > unlimited message storage capability, APRSdos does not and resorts to REJ

> > instead of ACK packets. Yes, this should be included in the SPEC in my  
> > opinion. IN fact, Kewnood should also have included REJ algorithm since  
> > it can only receive 16 messags before it begins loosing un-read msg.  
> >  
> > The beauty of it is that noone has to implement it, except the writer that  
> > has limited memory. The "sender" software doesnt care, since it will  
> > ignore the "REJ" and just keep assuming that the message is undelivered...  
> >  
> > Bob  
> >  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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## 64. [aprsspec] Storm Data

From: James Wagner <[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)>  
Date: Wed, 26 Jan 2000 16:45:05 -0800 (PST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-62737-2000.01.26-18.44.48--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62737-2000.01.26-18.44.48--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello again, everyone.

On page 53 of the draft, Storm Data is discussed. It seems to imply that storm data can be included in (weatherless) standard position reports.

I would like some clarification as to the starting position of the storm report. Does the course and speed occupy the "data extension" field and displace anything else that might otherwise be there (such as PHG)? Or, does it follow the data extension field?

When parsing such messages, how can storm data be recognized as distinct from plain comment text? If display symbols are either /@ or \@, can the presence of storm data be "guaranteed"? If these symbols are absent, can it be guaranteed that there is NO storm data?

Many thanks,  
Jim, KA7EHK

---

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<http://im.yahoo.com>

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---

## 65. [aprsspec] Re: Storm Data

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 26 Jan 2000 19:57:57 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-62739-2000.01.26-18.55.01--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-62739-2000.01.26-18.55.01--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Wed, 26 Jan 2000, James Wagner wrote:

> I would like some clarification as to the starting position  
> of the storm report. Does the course and speed occupy the  
> "data extension" field and displace anything else that  
> might otherwise be there (such as PHG)? Or, does it follow the  
> data extension field?

Follows it. Since the storm usually has a cse and speed

>  
> When parsing such messages, how can storm data be recognized as  
> distinct from plain comment text? If display symbols are either  
> /@ or \@, can the presence of storm data be "guaranteed"? If these  
> symbols are absent, can it be guaranteed that there is NO  
> storm data?

Data may or may not be there. But if data is there, I only look for it if  
it is a /@ or \@

bob

---

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---

## 66. [aprsspec] Re: [aprssig] Datums...

From: Tim Salo <salo@networkcs.com>  
Date: Thu, 27 Jan 2000 20:52:10 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-62952-2000.01.27-20.49.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: W01V@aol.com  
> Date: Thu, 27 Jan 2000 21:31:38 EST  
> Subject: [aprssig] Datums...  
> [...]  
> I haven't been around here to know if that topic has been addressed before,  
> but geographic coordinates given without a Datum can be misleading.  
>  
> With the FIVE decimals given for the coordinates above, the position is  
> within roughly a yard or so. But it could well be in the \*NAD 27\* datum. If  
> one's GPS is running WGS84, there could be a significant discrepancy -up to  
> thousands of feet I believe...

I think it might be nice if the APRS Protocol Description contained language  
similar to:

"All position data SHOULD use the WGS-84 datum."

(I was wondering when this would come up.)

((I was also wondering whether the APRS Protocol Description should  
recommend that APRS stations should try to average their position over  
time, rather than simply copying latest NMEA string. Of course this  
quickly gets more involved for moving stations...))

-tjs

---

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## 67. [aprsspec] Re: [aprssig] Datums...

From: Roger Barker <roger@peaksys.co.uk>  
Date: Fri, 28 Jan 2000 08:49:53 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-62993-2000.01.28-03.07.38--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-62952-2000.01.27-20.49.18--roger#peaksys.co.uk@list  
s.tapr.org>, Tim Salo <salo@networkcs.com> writes

>> From: W01V@aol.com  
>> Date: Thu, 27 Jan 2000 21:31:38 EST  
>> Subject: [aprssig] Datums...  
>> [...]  
>> I haven't been around here to know if that topic has been addressed before,  
>> but geographic coordinates given without a Datum can be misleading.  
>>  
>> With the FIVE decimals given for the coordinates above, the position is  
>> within roughly a yard or so. But it could well be in the \*NAD 27\* datum. If  
>> one's GPS is running WGS84, there could be a significant discrepancy -up to  
>> thousands of feet I believe...  
>>  
>> I think it might be nice if the APRS Protocol Description contained language  
>> similar to:

```
>
>      "All position data SHOULD use the WGS-84 datum."
>
>(I was wondering when this would come up.)
```

Interesting point... But what would users in parts of the world that don't use WGS-84 do? For instance all mapping in the UK is based on OSGB-36, and GPSs bought in the UK are configured to that datum.

Datum translation would be required for every posit transmitted and received.

```
--
Roger Barker, G4IDE          roger@peaksys.co.uk
Boston                      http://www.packetradio.org.uk
Lincolnshire, UK           http://www.peaksys.co.uk
```

```
---
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```

---

## 68. [aprsspec] Re: [aprssig] Datums...

```
From: Paul Keinanen <keinanen@sci.fi>
Date: Fri, 28 Jan 2000 17:21:11 +0200
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-63020-2000.01.28-09.16.30--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

On Fri, 28 Jan 2000 08:49:53 +0000, Roger Barker <roger@peaksys.co.uk> wrote:

```
>In article <LYR13460-62952-2000.01.27-20.49.18--roger#peaksys.co.uk@list
> s.tapr.org>, Tim Salo <salo@networkcs.com> writes
>>> From: W01V@aol.com
>>> Date: Thu, 27 Jan 2000 21:31:38 EST
>>> Subject: [aprssig] Datums...
>>> [...]
>>> I haven't been around here to know if that topic has been addressed before,
>>> but geographic coordinates given without a Datum can be misleading.
>>>
>>> With the FIVE decimals given for the coordinates above, the position is
>>> within roughly a yard or so. But it could well be in the *NAD 27* datum. If
>>> one's GPS is running WGS84, there could be a significant discrepancy -up to
>>> thousands of feet I believe...
>>
>>I think it might be nice if the APRS Protocol Description contained language
>>similar to:
>>
>>      "All position data SHOULD use the WGS-84 datum."
>>
>>(I was wondering when this would come up.)
>
>Interesting point... But what would users in parts of the world that
>don't use WGS-84 do? For instance all mapping in the UK is based on
>OSGB-36, and GPSs bought in the UK are configured to that datum.
```

Unfortunately the datum issue becomes more and more complicated when more and more DGPS services become available or if the SA is removed from the satellites. Currently the random errors due to SA and other errors sources are in the same order of magnitude as the difference between different coordination systems.

There is no problem as long as all persons involved in an operation are using the same datum, but does everyone know what datum should be used and how to setup in their own equipment? It is quite likely that equipment will be set to wrong datum and wrong types of maps are used, so there are real possibilities that search and rescue operations may fail due to this.

If an operation extends over a national border, it is quite likely that a different datum is used in each country and a physical point that is visible on many overlapping maps may have different coordinates depending on in which country (and in some cases even when) the map was printed. Adding to this confusion a generic GPS receiver will report the coordinate in WGS-84. The Maidenhead locator system should also be based on WGS-84, according to recent IARU Region 1 recommendation.

I think that the APRS 1.0 document should at least contain a warning

about the confusion about coordinate systems. Possibly also recommend that the WGS-84 should be used, but if not possible due to e.g. maps in different systems can be used and at least recommend how all participants in an operation should agree of which datum to use.

It might be a good idea to recommend that the full resolution format e.g. 07201.75W should be used only if it is in WGS-84 and the true resolution is 10-100 m and that the less accurate format e.g. 07201.7\_W should be used for an other datum, even if the position is known to a 10 m precision. This would reduce the risk of misunderstandings in the field.

One issue that should be addressed in some future version of the APRS standard is the inclusion of a orthogonal position format. In many countries local maps (e.g. 1:20000) are printed using some orthogonal coordinate system based on the UTM (Universal Transversal Mercator) or Gauss-Krüger system, in which a central meridian is selected and coordinates are reported as distance from the equator in meters and the (east/west) distance in meters perpendicular to this central meridian.

Paul OH3LWR

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## 69. [aprsspec] Re: [aprssig] Datums...

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 28 Jan 2000 11:00:54 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-63037-2000.01.28-09.58.38--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

APRS has always assumed WSG84. But then APRS was originally a USA only software. It is a tough issue.

I think though that we could simply list in the spec the "standard DATUM" for each "country" as a baseline reference. This way, everyone could then make the same "assumptions" as to what they are seeing.

For APRS version 2.0, we could look for a BYTE to add that would indicate the datum...

---

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## 70. [aprsspec] Re: [aprssig] Datums...

From: Richard Carter <[rcarter@isi.com](mailto:rcarter@isi.com)>  
Date: Fri, 28 Jan 2000 11:40:37 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-63046-2000.01.28-10.38.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

There are really two issues here. The datum used should match the datum of mapping software used to display target position. If correct target vectors are to be computed, targets need to use the same datum.

On the surface, it might appear that this is not an issue, given large errors introduced by selective activation. It has been my experience that GPS position reported by commercial receivers can be off by as much as 1/10th mile. This error may appear small, but may cause confusion if it were used for search and rescue operations. I haven't verified this, but I expect that the range and bearing from one target to another tends to be correct, assuming that both use the same datum, and neither uses differential correction. Extending the spec to include datum sounds like a wise plan. Who knows where APRS is headed.

BTW: For marine applications, GPS precision is marginal without it. I use a differential receiver, and I have noticed that they are becoming much more common. JRC makes a nice self-contained DGPS sensor at a very reasonable price. Raytheon, Furuno, and other manufacturers also have competitive products.

Rich Carter - KE1EV

-----Original Message-----

From: Bob Bruninga [SMTP:[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)]  
Sent: Friday, January 28, 2000 11:01 AM

To: APRS Spec Discussion List  
Cc: APRS Spec Discussion List  
Subject: [aprsspec] Re: [aprssig] Datums...

APRS has always assumed WSG84. But then APRS was originally a USA only software. It is a tough issue.

I think though that we could simply list in the spec the "standard DATUM" for each "country" as a baseline reference. This way, everyone could then make the same "assumptions" as to what they are seeing.

For APRS version 2.0, we could look for a BYTE to add that would indicate the datum...

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## 71. [aprsspec] Re: [aprssig] Datums...

From: csuprin@mitre.org (Charles Suprin)  
Date: Fri, 28 Jan 2000 13:51:33 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org (APRS Spec Discussion List)  
Message-ID: <LYR11589-63061-2000.01.28-12.48.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob,

Would not it be easier to have APRS use a single datum worldwide. This would reduce the burden on implementers. Rather than having to implement converting many datums to many other datums they would only need to implement a conversion of the standard datum to the other datums.

I believe NMEA specify a datum to be used.

Also there are arguments discussing whether this is really even an issue.

GPS has an error around that of the different datums. APRS should not care how we get a position. Maybe people use loran, maybe people set their transmitters on top of geodetic markers. Either way it should show on the correct place on the map.

Just my \$.02

Charles  
Comments mine not those of my employer.

Bob Bruninga wrote:

>  
> APRS has always assumed WSG84. But then APRS was originally a USA only  
> software. It is a tough issue.  
>  
> I think though that we could simply list in the spec the "standard DATUM"  
> for each "country" as a baseline reference. This way, everyone could then  
> make the same "assumptions" as to what they are seeing.  
>  
> For APRS version 2.0, we could look for a BYTE to add that would indicate  
> the datum...  
>  
> ---  
> You are currently subscribed to aprsspec as: csuprin@mitre.org  
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org  
To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

## 72. [aprsspec] Re: [aprssig] Datums...

From: Roger Barker <roger@peaksys.co.uk>  
Date: Fri, 28 Jan 2000 20:01:33 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63087-2000.01.28-13.59.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-63061-2000.01.28-12.48.40--roger#peaksys.co.uk@list  
s.tapr.org>, Charles Suprin <csuprin@mitre.org> writes  
>Bob,  
>  
>Would not it be easier to have APRS use a single datum worldwide.  
>This would reduce the burden on implementers. Rather than having to  
>implement converting many datums to many other datums they would only  
>need to implement a conversion of the standard datum to the other  
>datums.

Forgetting about GPSs for a moment, and looking at the basic practical  
issues involved in this:-

If I look up my location on a map in the UK, then the latitude and  
longitude I read off the map is referenced to OSGB-36. If someone in  
another part of the world does the same thing, then the latitude and  
longitude they read off their map is referenced to another datum.

I don't really think that anyone can seriously be expected to apply a  
Molodensky transformation to convert what they read off the map to  
WGS-84 before they put it into their software or TNC BTEXT!

Also, if my position referenced to OSGB-36 has an error of 100m or so  
when referenced to WGS-84, what practical difference is that going to  
make? (Unless you're planning to try and drop a cruise missile on my  
head! ;-) The only map data detailed enough to show the error is also  
likely to be referenced to OSGB\_36...

--  
Roger Barker, G4IDE                    roger@peaksys.co.uk  
Boston                                http://www.packetradio.org.uk  
Lincolnshire, UK                    http://www.peaksys.co.uk

---  
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---

### 73. [aprsspec] Re: [aprssig] Re: Datums...

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>  
Date: Fri, 28 Jan 2000 16:37:18 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>,  
aprsspec@lists.tapr.org  
Message-ID: <LYR11589-63103-2000.01.28-16.34.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Tim Salo wrote:

>  
> > From: W01V@aol.com  
> > [...]  
> > I haven't been around here to know if that topic has been addressed before,  
> > but geographic coordinates given without a Datum can be misleading.  
> >  
> > With the FIVE decimals given for the coordinates above, the position is  
> > within roughly a yard or so. But it could well be in the \*NAD 27\* datum. If  
> > one's GPS is running WGS84, there could be a significant discrepancy -up to  
> > thousands of feet I believe...  
>  
> I think it might be nice if the APRS Protocol Description contained language  
> similar to:  
>  
>        "All position data SHOULD use the WGS-84 datum."  
>  
> (I was wondering when this would come up.)

I've been avoiding this because it's likely to get me in a lecturing  
mode. If there's interest in selecting and using the appropriate datum,  
I'll be glad to get up on my soapbox, or at least refer you to a couple  
of well-written pages explaining what, why, etc.

I support Tim's suggestion that all collected data should be common, and  
for a variety of good reasons, WGS-84 is as good a selection as NAD-83.  
The problem is, most of the map basis we have for basemaps, Tiger files,  
are in NAD-27. In my particular area, the delta is about 120 m between





-Jeff

---

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---

## 76. [aprsspec] Re: [aprssig] Just rename APRS, was Re: Datums...

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>  
Date: Fri, 28 Jan 2000 17:39:13 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>,  
APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63112-2000.01.28-17.40.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Jeff King wrote:

>  
> I've got a solution for the datum issue.  
>  
> Lets just rename APRS to AMERICAN Packet Reporting System. ;-)

AHA! We can do that but then we'd have to standardize on NAD83, which was developed in concert with the geodetic organizations of Canada, the US, Mexico and most all of Central America.

73, gerry

--

|                                                                                               |                                       |
|-----------------------------------------------------------------------------------------------|---------------------------------------|
| Gerry Creager                                                                                 | Spatial Sciences Laboratory           |
| 409.845.7201 Office                                                                           | Texas Agricultural Experiment Station |
| 409.845.2273 Fax                                                                              | Texas A&M University System           |
| 409.228.7686 Pager (preferred)                                                                | College Station, Texas 77843-2120     |
| gerry@page4.tamu.edu                                                                          | Pager: 4092287686@mobile.att.net      |
| "Opinions expressed are mine and do not necessarily represent those of Texas A&M University." |                                       |

---

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

## 77. [aprsspec] Re: [aprssig] Just rename APRS, was Re: Datums...

From: judyrod.padmore@ns.sympatico.ca (Rodney Padmore)  
Date: Fri, 28 Jan 2000 19:56:37 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>,  
APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63118-2000.01.28-17.53.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Jeff King wrote:

>  
> I've got a solution for the datum issue.  
>  
> Lets just rename APRS to AMERICAN Packet Reporting System. ;-)  
>  
> (with due apologies to Canada and Mexico)

>  
> -Jeff

>

> ---

> You are currently subscribed to aprssig as: JUDYROD.PADMORE@NS.SYMPATICO.CA  
> To unsubscribe send a blank email to leave-aprssig-1562R@lists.tapr.orgMaybe NAFTAPRS would be an acceptable compromise! 73 de Rod,VE1BSK.

---

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

## 78. [aprsspec] Re: [aprssig] Re: Datums...

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Fri, 28 Jan 2000 17:48:25 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>,  
<aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63117-2000.01.28-19.45.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Three years ago, I asked the same question about the Datum of APRS SIG. There was no definitive answer back then. I was thinking about making DeLorme Street Atlas USA available for APRS use, and it used WGS-84. Fortunately, more GPS receiver default output to WGS-84, so it was not a major issue. However, I discovered that some online maps such as MapBlast, used by the APRS+SA web server, a feature copied by APRServe and recently by WinAPRS, uses NAD-27. So with these web based maps, you may find that you are not exactly where you think you are, complicated by Selective Availability (SA) of course. APRS+SA's web server does perform a transform of data to NAD-27, and assumes the on-air data is in WGS-84. APRS+SA allows for the entry of Lat/Long in more than 100 map datums, and converts the data to WGS-84 for transmission.

Brent Hildebrand, KH2Z

APRS+SA  
<http://www.tapr.org/~kh2z/aprsplus>

[]

----- Original Message -----

From: Gerry Creager N5JXS <gerry@cs.tamu.edu>  
To: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>;  
<aprsspec@lists.tapr.org>  
Sent: Friday, January 28, 2000 2:37 PM  
Subject: [aprssig] Re: Datums...

> Tim Salo wrote:  
>  
> > From: W01V@aol.com  
> > [...]   
> > I haven't been around here to know if that topic has been addressed  
before,  
> > but geographic coordinates given without a Datum can be misleading.  
> >  
> > With the FIVE decimals given for the coordinates above, the position  
is  
> > within roughly a yard or so. But it could well be in the \*NAD 27\*  
datum. If  
> > one's GPS is running WGS84, there could be a significant  
discrepancy -up to  
> > thousands of feet I believe...  
> >  
> > I think it might be nice if the APRS Protocol Description contained  
language  
> > similar to:  
> >  
> > "All position data SHOULD use the WGS-84 datum."  
> >  
> > (I was wondering when this would come up.)  
>  
> I've been avoiding this because it's likely to get me in a lecturing  
> mode. If there's interest in selecting and using the appropriate datum,  
> I'll be glad to get up on my soapbox, or at least refer you to a couple  
> of well-written pages explaining what, why, etc.  
>  
> I support Tim's suggestion that all collected data should be common, and  
> for a variety of good reasons, WGS-84 is as good a selection as NAD-83.  
> The problem is, most of the map basis we have for basemaps, Tiger files,  
> are in NAD-27. In my particular area, the delta is about 120 m between  
> NAD-83 and NAD-27. In another area of Texas I've looked at, it's on the  
> order of 200m, and in a third, it's less than 10m.  
>  
> What we need to do is go in search of newer basemaps, and develop new  
> APRS maps from those. Specifically, we should be using maps based on  
> NAD-83 or WGS-84 datums.  
>  
> > ((I was also wondering whether the APRS Protocol Description should  
> > recommend that APRS stations should try to average their position over  
> > time, rather than simply copying latest NMEA string. Of course this  
> > quickly gets more involved for moving stations...))  
>  
> No. There's a couple or 5 good reason not to do this, not the least of  
> which is, thanks to SA (it's still around!) and systematic errors, your  
> average could well be off.  
>

```

> 73, gerry n5jxs
> --
> Gerry Creager                Spatial Sciences Laboratory
> 409.845.7201 Office          Texas Agricultural Experiment Station
> 409.845.2273 Fax             Texas A&M University System
> 409.228.7686 Pager (preferred) College Station, Texas 77843-2120
> gerry@page4.tamu.edu         Pager: 4092287686@mobile.att.net
> "Opinions expressed are mine and do not necessarily represent those of
> Texas A&M University."
>
> ---
> You are currently subscribed to aprssig as: bhildebrand@earthlink.net
> To unsubscribe send a blank email to leave-aprssig-67575@lists.tapr.org
>
>

```

```

---
You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

```

## 79. [aprsspec] Position ambiguity, AGAIN, was Re: D700 Position

```

From: Jeff King <jeff@aerodata.net>
Date: Sat, 29 Jan 2000 21:00:57 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>,
    aprsspec@lists.tapr.org
Message-ID: <LYR11589-63347-2000.01.29-19.56.57--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

There seems to be a compliance issue among some of the APRS programs and the APRSpec item "position ambiguity". This came up a week or two ago on the SIG, and all that was said was that it was part of the spec. Fine, but this "APRS-SPEC" doesn't help much if people don't write compliant software.

Being I'm of the mind that navigation is a life and death issue, I think this might need to be addressed by the APRS-WG. In particular, a list of non compliant applications should be published to head off any potential liability issues. This should include both the present APRS trademark licenses as well as compatible programs.

-Jeff

P.S. We now have a off the shelf radio, PLUG and PLAY, so to speak, supporting APRS, made by a major amateur manufacturer. This manufacturer, in good faith, wrote their software to be complaint with a pre-release version of the APRS-SPEC. Yet at this late date, apparently even some of the core applications are still not complaint. Call me all the names you want, but as soon as someone dies because their posit is displayed 1000 miles in error, you'll wish you either had a disclaimer or were compliant with the very spec you are writing.

P.P.S. Advance apologies if this has already been fixed or its actually a Kenwood problem. Its just the second time this has come up in the last two weeks and I know at least one application was still non compliant in December of 1999.

Richard \"Flip\" Minton wrote:

```

> Ok, figured it out. In the APRS menu selection 3-5 it allows
> you to adjust position ambiguity. Which varies your position
> accuracy. With the setting in the "off" position things are correct.
>
> Flip
>
>
> ----- Original Message -----
> From: Richard "Flip" Minton <fminton@midwest.net>
> To: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>
> Cc: APRS <aprssig@lists.tapr.org>
> Sent: Saturday, January 29, 2000 9:45 AM
> Subject: [aprssig] Re: D700 Position
>
> > Nope, if it was east I'd be in Europe. I'm showing out in the four
> > corners area of the states instead of Illinois.
> >

```

```

> > The string is showing 3700.00N\10855.05W on the Winaprs
> > screen. Should be 3753.90N/08855.05W
> >
> > And the radio shows the correct coordinates, checked and double checked
> >
> > Flip
> >
> >
> >
> > ----- Original Message -----
> > From: Walter Holmes <walterh@houston-intranet.com>
> > To: 'Richard "Flip" Minton' <fminton@midwest.net>
> > Sent: Saturday, January 29, 2000 9:40 AM
> > Subject: RE: [aprssig] D700 Position
> >
> >
> > > Sounds like you may have selected East, instead of West on one of your
> > > coordinates..
> > >
> > > Very common problem that many of us have bumped into as well.
> > >
> > > Walter/K5WH
> > >
> > > -----Original Message-----
> > > From: bounce-aprssi-2077@lists.tapr.org
> > > [mailto:bounce-aprssi-2077@lists.tapr.org] On Behalf Of Richard "Flip"
> > > Minton
> > > Sent: Saturday, January 29, 2000 9:05 AM
> > > To: TAPR APRS Special Interest Group
> > > Subject: [aprssi] D700 Position
> > >
> > > Hi, playing with a D700 here, and found that I am showing
> > > up on my map with an error of about a thousand miles
> > > on the longitude display. Position has been entered correctly
> > > both manually and from the GPS. The unit shows the correct
> > > grid square, and has the proper mileage to local stations.
> > > But on Win APRS 2.4.3 I'm off a bunch. Any ideas?
> > >
> > > Flip Minton N9AZZ
> > > fminton@midwest.net
> > >
> > >
> > > ---
> > > You are currently subscribed to aprssi as: K5WH@HOUSTON-INTRANET.COM
> > > To unsubscribe send a blank email to leave-aprssi-8644D@lists.tapr.org
> > >
> > >
> > > ---
> > > You are currently subscribed to aprssi as: fminton@midwest.net
> > > To unsubscribe send a blank email to leave-aprssi-8644D@lists.tapr.org
> > >
> > >
> > > ---
> > > You are currently subscribed to aprssi as: jeff@aerodata.net
> > > To unsubscribe send a blank email to leave-aprssi-8644D@lists.tapr.org
> > >
> > >
> > > ---
> > > You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
> > > To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
> > >
> > >

```

## 80. [aprsspec] What happened to ?ping?

```

From: Jim Wagner <wagnerj@proaxis.com>
Date: Sat, 29 Jan 2000 22:10:26 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-63374-2000.01.29-23.07.33--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

I had the great opportunity to visit with 30 or so APRS folks this afternoon. I had a chance to see a variety of APRS machinery in operation.

One of the stations was sending ?ping? queries to another. I asked where it came from as I did not recognize it from the draft specs. He said that it was part of dosAPRS.

So, the question: where is it? Gone? Overlooked?

Thanks,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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To unsubscribe send a blank email to [leave-aprsspec-11589P@lists.tapr.org](mailto:leave-aprsspec-11589P@lists.tapr.org)

---

## 81. [aprsspec] Re: What happened to ?ping?

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 30 Jan 2000 01:02:58 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-63382-2000.01.30-00.00.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

IM not sure. It was there back 8 years ago as a do-nothing packet. Just a way to send a packet that would NOT get interpreted as anything but did allow you to test packets on the air. I have not supported it in years, yet I get ?PING? messages from folks often. So it must be some other version doing it. I don't know what the proper response is supposed to be...?

Bob

On Sat, 29 Jan 2000, Jim Wagner wrote:

> I had the great opportunity to visit with 30 or so APRS folks this  
> afternoon. I had a chance to see a variety of APRS machinery in operation.  
>  
> One of the stations was sending ?ping? queries to another. I asked where it  
> came from as I did not recognize it from the draft specs. He said that it  
> was part of dosAPRS.  
>  
> So, the question: where is it? Gone? Overlooked?  
>  
> Thanks,  
>  
> Jim Wagner  
> Oregon Research Electronics  
> -----  
> wagnerj@proaxis.com           Tangent, Oregon 97389  
> KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
> ka7ehk@yahoo.com           Oregon State University  
> -----  
> A computer without Windows is like a cake without mustard. - anonymous  
>  
>  
>  
> ---  
> You are currently subscribed to aprsspec as: [bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)  
> To unsubscribe send a blank email to [leave-aprsspec-11589P@lists.tapr.org](mailto:leave-aprsspec-11589P@lists.tapr.org)  
>  
>

APRSdos REPLY/COMMENT:

Reply mail addr:    [wb4apr@amsat.org](mailto:wb4apr@amsat.org)  
US mail address:    115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY:   <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE:   <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio:   <http://www.tapr.org/tapr/html/mic-e.html>

---

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To unsubscribe send a blank email to [leave-aprsspec-11589P@lists.tapr.org](mailto:leave-aprsspec-11589P@lists.tapr.org)

## 82. [aprsspec] AX.25 TOCALLS and "TELEM"

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 31 Jan 2000 16:32:17 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63699-2000.01.31-15.29.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

SPEC group...

When we made the list of allowable AX.25 DESTINATION calls, I extracted out of APRSdos the ones that I thought were generic and could be justified to you guys. But over the years, APRSdos had collected over 31 such specific generic calls that I have seen used with specific UI type data and wanted to capture.. So they are in APRSdos, but only the more obvious ones made it into the spec...

Well, we forgot one. Its in APRSdos, but not in the spec.. It is TEL (for telemetry). What we put in the spec was TLM.. I figured that is what the PACSATS use... so why not standardize on it...

Well last weeks launch of STENSAT I just learned uses the call of TELEM. So, fortunately APRSdos users will see the packet, but a fully compliant software IAW the spec will not, without disabling ALTNETS. So I recommend we add TEL... to the spec...

Of course if STENSAT turns out to not turn on (in 3 days when it is supposed to, then it is a moot point. But if it does turn on... ARGH!!!

YIKES, the Kenwoods wont decode it!!! I wonder.... Sheesh....

Yep, just tested it and the kenwoods dont include TELEM either...

Gosh, I sure wish the builders of satellites (on the same campus as I am) would have ASKED me first.... I was not even aware of the project until after it was in the can!

The good news is that the Kewnoods can receive it by changin to the ALTNET call of TELEM... (An then NOT forgetting to turn back afterwards)...

Bob

----- Forwarded message -----  
Date: Mon, 31 Jan 2000 15:32:13 -0500 (EST)  
From: Bob Bruninga <bruninga@nadn.navy.mil>  
To: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
Subject: [aprssig] STENSAT

APRSdom...  
I am happy to report that the STENSAT telemetry was built with a modified MIM and therefore the telemetry will be APRS decodable! So when the satellite is deployed on Wednesday, we should be able to capture it with your APRS software and more importatnly with your Kenwood Radios!

I have no more info at this point. You will be the first to know when I find out the telemetry equations... and activation times...

de WB4APR,Bob

-----  
From: Hank Heidt  
Cc: Assoc Prof Carl E Wick

StenSat's telemetry should be APRS compliant. It is a TELEMETRY packet with a "T#" preamble:

N4AFL-1>TELEM<UI C>: T#000,255,004,037,129,032,010 STENSAT PICOSAT

where the Telemetry numbers are (in order):  
Sequence number - goes to 255, then rolls to zero  
Power supply monitor  
Current monitor  
Temp monitor  
2.5 volt reference  
Current RSSI value  
Three light sensors (low value means light is striking the sensor):  
Light sensor values are (in order):  
Flat face (3 by 4 inches)

Long side (1 by 4 inches)  
Short side (1 by 3 inches)

---

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---

### 83. [aprsspec] RE: AX.25 TOCALLS and "TELEM"

From: "Sadowski, Allan" <allan.sadowski@ncshp.org>  
Date: Mon, 31 Jan 2000 16:45:10 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63703-2000.01.31-15.38.19--lyris.aprsspec@tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob

I know the goal is to squeeze every last byte out of transmissions... but  
TLM and TEL are no where near as clear as TELEM...

Since you are throwing proposal issues on the table.. can I second that  
TELEM be the "standard".... it's a whole lot LESS AMBIGUOUS than the  
other two .... the cat is sorta outta the bag now... no?

ALOHA  
AH6LS

> -----Original Message-----  
> From: Bob Bruninga [SMTP:bruninga@nadn.navy.mil]  
> Sent: Monday, January 31, 2000 4:32 PM  
> To: APRS Spec Discussion List  
> Cc: APRS Spec Discussion List  
> Subject: [aprsspec] AX.25 TOCALLS and "TELEM"  
>  
> SPEC group...  
>  
> When we made the list of allowable AX.25 DESTINATION calls, I extracted  
> out of APRSdos the ones that I thought were generic and could be  
> justified to you guys. But over the years, APRSdos had collected over 31  
> such specific generic calls that I have seen used with specific UI type  
> data and wanted to capture.. So they are in APRSdos, but only the more  
> obvious ones made it into the spec...  
>  
> Well, we forgot one. Its in APRSdos, but not in the spec.. It is TEL  
> (for telemetry). What we put in the spec was TLM.. I figured that is  
> what the PACSATS use... so why not standardize on it...  
>  
> Well last weeks launch of STENSAT I just learned uses the call of TELEM.  
> So, fortunately APRSdos users will see the packet, but a fully compliant  
> software IAW the spec will not, without disabling ALTNETS. So I recommend  
> we add TEL... to the spec...  
>  
> Of course if STENSAT turns out to not turn on (in 3 days when it is  
> supposed to, then it is a moot point. But if it does turn on... ARGH!!!  
>  
> YIKES, the Kenwoods wont decode it!!! I wonder.... Sheesh....  
>  
> Yep, just tested it and the kenwoods dont include TELEM either...  
>  
> Gosh, I sure wish the builders of satellites (on the same campus as I am)  
> would have ASKED me first.... I was not even aware of the project until  
> after it was in the can!  
>  
> The good news is that the Kewnoods can receive it by changin to the ALTNET  
> call of TELEM... (An then NOT forgetting to turn back afterwards)...  
>  
>  
> Bob  
>  
> ----- Forwarded message -----  
> Date: Mon, 31 Jan 2000 15:32:13 -0500 (EST)

> From: Bob Bruninga <bruninga@nadn.navy.mil>  
> To: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
> Subject: [aprssig] STENSAT  
>  
> APRSdom...  
> I am happy to report that the STENSAT telemetry was built with a  
> modified MIM and therefore the telemetry will be APRS decodable!  
> So when the satellite is deployed on Wednesday, we should be able to  
> capture it with your APRS software and more importantly with your Kenwood  
> Radios!  
>  
> I have no more info at this point. You will be the first to know when I  
> find out the telemetry equations... and activation times...  
>  
> de WB4APR,Bob  
> -----  
> From: Hank Heidt  
> Cc: Assoc Prof Carl E Wick  
>  
> StenSat's telemetry should be APRS compliant. It is a TELEMETRY  
> packet with a "T#" preamble:  
>  
> N4AFL-1>TELEM<UI C>: T#000,255,004,037,129,032,010 STENSAT PICOSAT  
>  
> where the Telemetry numbers are (in order):  
> Sequence number - goes to 255, then rolls to zero  
> Power supply monitor  
> Current monitor  
> Temp monitor  
> 2.5 volt reference  
> Current RSSI value  
> Three light sensors (low value means light is striking the sensor):  
> Light sensor values are (in order):  
> Flat face (3 by 4 inches)  
> Long side (1 by 4 inches)  
> Short side (1 by 3 inches)  
>

---

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---

## 84. [aprsspec] RE: AX.25 TOCALLS and "TELEM"

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 31 Jan 2000 16:47:45 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63705-2000.01.31-15.45.28--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 31 Jan 2000, Sadowski, Allan wrote:

> I know the goal is to squeeze every last byte out of transmissions... but  
> TLM and TEL are no where near as clear as TELEM...  
>  
> Since you are throwing proposal issues on the table.. can I second that  
> TELEM be the "standard".... it's a whole lot LESS AMBIGUOUS than the  
> other two .... the cat is sorta outta the bag now... no?

Yes, remember these are all right-wilcarded, so TEL will accept TELEM...  
yet still allow for other subsets....

bob

---

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## 85. [aprsspec] Re: What happened to ?ping?

From: Mark Sproul <kb2ici@amsat.org>  
Date: Mon, 31 Jan 2000 16:53:28 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63708-2000.01.31-15.53.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At 12:10 AM -0500 1/30/00, Jim Wagner wrote:

>I had the great opportunity to visit with 30 or so APRS folks this



>afternoon. I had a chance to see a variety of APRS machinery in operation.  
>  
>One of the stations was sending ?ping? queries to another. I asked where it  
>came from as I did not recognize it from the draft specs. He said that it  
>was part of dosAPRS.  
>  
>So, the question: where is it? Gone? Overlooked?  
>  
>Thanks,  
>

WinAPRS implements ?PING? exactly the same as ?APRST which is Trace route.  
Therefore ?PING? is kind of redundant since ?APRST does the same thing.

Mark

---

PLEASE NOTE NEW EMAIL ADDRESS  
!!!!!!!!!!!!

msproul@apmail.ap.org

---

|                                 |                    |
|---------------------------------|--------------------|
| Mark Sproul                     |                    |
| Software Engineer @ Assoc Press | Work: 609-860-7120 |
| msproul@apmail.ap.org           | Fax: 609-860-7129  |

---

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# February 2000

Original source file: aprsspec.0002

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssidg/aprsspec/mail\\_archive/aprsspec.0002](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssidg/aprsspec/mail_archive/aprsspec.0002)

## 1. [aprsspec] Flag Byte Error?

From: "Michael Pendley" <mycall@sandia.gov>  
Date: Tue, 1 Feb 2000 10:36:53  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63911-2000.02.01-10.34.29--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I just joined the list today so I am late to the table and may have missed any discussion on this. However, I searched the list and found no post on this subject. Sorry if this is old news.

On page 12 of the APRS Spec (Draft Version 1.0.1g: 3 December 1999) -- Flag is defined to be the bit sequence 0x7F. I believe this should be 0x7E

-Mike

---

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## 2. [aprsspec] Re: Flag Byte Error?

From: Ian Wade <ian@dowrmain.demon.co.uk>  
Date: Tue, 1 Feb 2000 17:06:00 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-63917-2000.02.01-11.06.21--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR11659-63911-2000.02.01-10.34.29--ian#dowrmain.demon.co.uk@lists.tapr.org>, Michael Pendley <mycall@sandia.gov> writes

>  
>On page 12 of the APRS Spec (Draft Version 1.0.1g: 3 December 1999) -- Flag  
>is defined to be the bit sequence 0x7F. I believe this should be 0x7E  
>

Yup, I don't know what I was doing when I typed 0x7f ... I've only known it was 0x7e since 1983 ..... :-))

It will be fixed in the next release.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|                                     email: g3nrw@arrl.net |
|                                     |                   |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
+-----+
```

---

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## 3. [aprsspec] Re: AX.25 TOCALLS and "TELEM"

From: Tim Salo <salo@networkcs.com>  
Date: Wed, 2 Feb 2000 20:52:15 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-64185-2000.02.02-20.49.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Mon, 31 Jan 2000 16:32:17 -0500 (EST)  
> From: Bob Bruninga <bruninga@nadn.navy.mil>  
> Subject: [aprsspec] AX.25 TOCALLS and "TELEM"  
>

> When we made the list of allowable AX.25 DESTINATION calls, I extracted  
> out of APRSdos the ones that I thought were generic and could be  
> justified to you guys. But over the years, APRSdos had collected over 31  
> such specific generic calls that I have seen used with specific UI type  
> data and wanted to capture.  
> [...]

It sounds like it might be worthwhile to rethink how the destination AX.25 address is used APRS. In particular, how to make whatever use is made of this field extensible.

(By the way, I started thinking about all of the international call signs that might conflict with the generic call signs...)

> So they are in APRSdos, but only the more  
> obvious ones made it into the spec...

Will APRSdos be upgraded to conform to the spec once it is finalized?

> YIKES, the Kenwoods wont decode it!!! I wonder.... Sheesh....  
> Yep, just tested it and the kenwoods dont include TELEM either...

[Insert long diatribe about the evils of hard-coded rigs, TNCs, and just about anything else that implements a communications protocol here.]

-tjs

---

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---

#### 4. [aprsspec] Re: What happened to ?ping?

From: Tim Salo <salo@networkcs.com>  
Date: Wed, 2 Feb 2000 20:56:31 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-64186-2000.02.02-20.53.46--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Mon, 31 Jan 2000 16:53:28 -0500  
> From: Mark Sproul <kb2ici@amsat.org>  
> Subject: [aprsspec] Re: What happened to ?ping?  
>  
> At 12:10 AM -0500 1/30/00, Jim Wagner wrote:  
> >I had the great opportunity to visit with 30 or so APRS folks this  
> >afternoon. I had a chance to see a variety of APRS machinery in operation.  
> >  
> >One of the stations was sending ?ping? queries to another. I asked where it  
> >came from as I did not recognize it from the draft specs. He said that it  
> >was part of dosAPRS.  
> >  
> >So, the question: where is it? Gone? Overlooked?  
> >  
> WinAPRS implements ?PING? exactly the same as ?APRST which is Trace route.  
> Therefore ?PING? is kind of redundant since ?APRST does the same thing.

?APRST is in the spec, but ?PING? is not.

What are you proposing?

To change the spec?

To upgrade WinAPRS?

To let the spec and WinAPRS diverge?

-tjs

---

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---

#### 5. [aprsspec] Re: What happened to ?ping?

<LYR11591-64186-2000.02.02-20.53.46--msproul#apmail.ap.org@lists.tapr.org>

From: Mark Sproul <kb2ici@amsat.org>  
Date: Thu, 03 Feb 2000 12:37:35 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-64257-2000.02.03-11.35.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>>  
>> WinAPRS implements ?PING? exactly the same as ?APRST which is Trace route.  
>> Therefore ?PING? is kind of redundant since ?APRST does the same thing.  
>  
>>APRST is in the spec, but ?PING? is not.

>  
>What are you proposing?  
>  
>To change the spec?  
>  
>To upgrade WinAPRS?  
>  
>To let the spec and WinAPRS diverge?  
>

I am not proposing anything

?APRST is the official SPEC version, I had ?PING? in a long time ago to be sort of compatible with the ?PING? that Bob had. I have not gotten around to removing it.

As I stated above, in WinAPRS, "?PING?" and "?APRST" currently do the EXACT same thing. I don't see any issue here. I can easily remove PING if needed.

Mark

---

PLEASE NOTE NEW EMAIL ADDRESS  
!!!!!!!!!!!!!!

msproul@apmail.ap.org

---

|                                 |                    |
|---------------------------------|--------------------|
| Mark Sproul                     |                    |
| Software Engineer @ Assoc Press | Work: 609-860-7120 |
| msproul@apmail.ap.org           | Fax: 609-860-7129  |

---

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---

## 6. [aprsspec] Re: [aprssig] Re: xastir (was: Re: What is APRSdos anyway?)

From: Jeff King <jeff@aerodata.net>  
Date: Thu, 03 Feb 2000 16:24:53 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-64300-2000.02.03-15.21.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

John Ackermann wrote:

> Jeff King writes:  
>  
> >Last time I asked, Frank and Roger Barker (author of UI-View)  
> >were excluded from the APRS-WG. So while we can guess its  
> >the fact Frank is releasing his source, how would you explain the  
> >dis' of Roger from the APRS-WG?( Roger doesn't release his  
> >source.)  
>  
> To my knowledge, neither Roger nor Frank have asked to join the Working  
> Group. If they do ask, the Charter has a process for voting on new  
> members. I can't speak to how the members might vote on any specific  
> request, but I can tell you that to date the issue hasn't come up.

I'm confused by this response. Are you indicating each and every member of the WG had to go through this process? That is, that they specifically had to "ask to join the WG" in a message to a member of the WG?

I think not....?

In any case, I don't see anything in the charter about "asking" to join. Can you please quote me the section in the charter that requires prospective new members to "ask" to join?

In fact, reading the charter, it appears quite the opposite of what you are saying here. The charter clearly states that new members may only be made upon motion of a current member. I see nothing about "asking to join".

Hey, I have an idea here that will fix the WG oversight regarding these two authors..... why don't \*you\* make a motion to the WG

that Roger and Frank be nominated for membership? Then if they decline to accept this nomination, this issue is closed. IMHO, it seems to me the section of the charter that talks about membership is intended to allow members of the WG to nominate new members that they feel can make a positive contribution. Clearly, both of these people have made positive contributions to APRS and would broaden the experience base of the WG. Does the WG disagree with this?

Irregardless of if or if not either of them "asked to join", I think it would be in the WG's best interest, and ultimately APRS, to have European representation as well as "open development" mindset type folks on the WG. This is very important now that the WG is moving past documenting the present protocols, and will hopefully start looking at extensions to APRS as well as the "Big picture" as Bob outlined in an earlier message.

Regards,

Jeff

---

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---

## 7. [aprsspec] Telemetry "support" packets

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sun, 6 Feb 2000 22:25:48 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-64821-2000.02.06-23.23.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-64821-2000.02.06-23.23.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello, again...

I am really curious why the ".PARM" and other telemetry support packets were made so pointedly "non-APRS"?

Clearly, the capability of one station to beacon "for" the actual telemetry sender is useful. But it would seem that a better format, say, akin to message addressing, would allow standard APRS network filtering to be applied.

Thanks,

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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## 8. [aprsspec] Re: Telemetry "support" packets

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 7 Feb 2000 08:32:52 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-64868-2000.02.07-07.30.58--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-64868-2000.02.07-07.30.58--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sun, 6 Feb 2000, Jim Wagner wrote:

> I am really curious why the ".PARM" and other telemetry support packets  
> were made so pointedly "non-APRS"?  
>  
> Clearly, the capability of one station to beacon "for" the actual telemetry  
> sender is useful. But it would seem that a better format, say, akin to  
> message addressing, would allow standard APRS network filtering to be  
> applied.

What is non-APRS about an APRS message? The telemetry formats and equations (usually transmitted after the fact) are in "standard" APRS message format.

---

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---

## 9. [aprsspec] Re: Telemetry "support" packets

From: James Wagner <[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)>  
Date: Mon, 7 Feb 2000 23:11:01 -0800 (PST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-64993-2000.02.08-01.08.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-64993-2000.02.08-01.08.44--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

>  
> On Sun, 6 Feb 2000, Jim Wagner wrote:  
>  
> > I am really curious why the ".PARM" and other telemetry support  
> packets  
> > were made so pointedly "non-APRS"?  
> >  
> > Clearly, the capability of one station to beacon "for" the actual  
> telemetry  
> > sender is useful. But it would seem that a better format, say, akin  
> to  
> > message addressing, would allow standard APRS network filtering to  
> be  
> > applied.  
>  
> What is non-APRS about an APRS message? The telemetry formats and  
> equations (usually transmitted after the fact) are in "standard" APRS  
> message format.  
>

Just take a look at the bottom of page 54. It says:

Note: These beacons are not APRS Bulletins □ they are ordinary UI  
beacon  
text frames, and do not have any APRS Data Type Identifier.

---

Do You Yahoo!?  
Talk to your friends online with Yahoo! Messenger.  
<http://im.yahoo.com>

---

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---

## 10. [aprsspec] TELEMETRY Parameters

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 8 Feb 2000 08:42:04 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-65015-2000.02.08-07.39.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-65015-2000.02.08-07.39.44--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Jim Wagner correctly pointed out that the spec has the TELEMETRY  
PARM,UNITS,EQNS, etc packets wrong. The SPEC implies they are unfomratted  
AS.25 "BEACONS", when in fact, they are standard APRS MESSAGE FORMAT.  
Thus they look like any other APRS message.

Ian, we will need to fix this in the spec...

bob

---

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---

## 11. [aprsspec] TEST ONLY: New ISP account

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Sun, 13 Feb 2000 15:13:34 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-65748-2000.02.13-09.12.29--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-65748-2000.02.13-09.12.29--lyris.aprsspec#tapr.org@lists.tapr.org)>

Rendered body type: text/plain

Hellooooooooooooooooooooooooooooooooo

--

Ian Wade

---

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## 12. [aprsspec] MIC-E decoding in java

From: Jonathan Bradshaw <jonathan@NrgUp.Net>  
Date: Thu, 17 Feb 2000 11:51:01 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-66403-2000.02.17-10.48.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I'm working on java code to decode a MIC-E packet. First, if someone has done this already I'd love to see it!

Second, I'd like to know about quirks that I should be aware of. It seems there may be some early MIC-E units that do things a little differently? I've read the APRS draft 1.0.1 many times to create this code but I'm just not completely sure what I'm missing.

Here is what I have so far. Constructive comments would be welcome.

file: MIC\_E.java

```
/*
   MIC-E class takes a valid binary MIC-E AX.25 packet and decodes the
   payload.
*/

import java.util.*;
import java.text.*;

public final class MIC_E {
    private final static String[] MESSAGETEXT = {
        "M0/Off Duty", "M1/En Route", "M2/In Service",
        "M3/Returning", "M4/Committed", "M5/Special",
        "M6/PRIORITY", "M7/EMERGENCY",
        "C0/Custom-0", "C1/Custom-1", "C2/Custom-2",
        "C3/Custom-3", "C4/Custom-4", "C5/Custom-5",
        "C6/Custom-6", "C7/EMERGENCY" };
    private static SimpleDateFormat UTC;

    static {
        // Set zulu time zone used in converted packets
        UTC = new SimpleDateFormat("ddHHmm");
        UTC.setTimeZone(TimeZone.getTimeZone("UTC"));
    }

    public static String decodePosition(String dest, String content,
                                       long timestamp) {
        int speed, course, message, longoffset;
        char northsouth, westeast;
        double latitude, longitude, altitude;

        byte[] bytedest = dest.getBytes();
        byte[] bytecontent = content.getBytes();

        message    = ((bytedest[0] & 64) == 0 ? 4 : 0)
                    + ((bytedest[1] & 64) == 0 ? 2 : 0)
                    + ((bytedest[2] & 64) == 0 ? 1 : 0);
        message    += ((bytedest[0] & 16) == 0 ? 7 : 0);
        northsouth = ((bytedest[3] & 64) == 0 ? 'S' : 'N');
        longoffset  = ((bytedest[4] & 64) == 0 ? 0 : 100);
        westeast    = ((bytedest[5] & 64) == 0 ? 'E' : 'W');
        latitude    = ((bytedest[0] & 15) * 1000)
                    + ((bytedest[1] & 15) * 100)
                    + ((bytedest[2] & 15) * 10)
                    + (bytedest[3] & 15)
                    + ((bytedest[4] & 15) * 0.10)
                    + ((bytedest[5] & 15) * 0.01);
        longitude   = (bytecontent[1] - 28) + longoffset;
        if (longitude >= 180 && longitude <= 189)
            longitude -= 80;
        else if (longitude >= 190 && longitude <= 199)
            longitude -= 190;
    }
}
```

```

longitude *= 100;
longitude += (bytecontent[2] - 28 >= 60 ? bytecontent[2]-88
: bytecontent[2]-28);
longitude += (bytecontent[3] - 28) * 0.01;
speed = ((bytecontent[4] - 28) * 10) + ((bytecontent[5] - 28) / 10);
if (speed >= 800) speed -= 800;
course = (((bytecontent[5] - 28) % 10) * 100) + (bytecontent[6] - 28);
if (course >= 400) course -= 400;
if (bytecontent.length >= 11 && bytecontent[13] == '}') {
    altitude = (((bytecontent[10] - 33) * 8281)
+ ((bytecontent[11] - 33) * 91)
+ (bytecontent[12] - 33)) - 10000) * 3.280;
} else altitude = -1;

// Return the decoded packet content
return "@" + UTC.format(new Date(timestamp))
+ "Z" + format("0000.00", latitude) + northsouth
+ content.charAt(8) + format("00000.00", longitude) + westeast
+ content.charAt(7) + format("000", course) + "/"
+ format("000", speed) + "/Mic-E/" + MESSAGETEXT[message]
+ (altitude >= 0 ? " /A=" + format("000000", altitude) : "");
}

public static String decodeText(String content) {
    String text = "";
    byte[] bytecontent = content.getBytes();

    if (content.length() <= 10) return "";

    switch (bytecontent[9]) {
        case '>' : // Kenwood TH-D7
        case ']' : // Kenwood TM-D700
            if (content.length() > 13 && content.charAt(13) != '}') {
                text = ">" + content.substring(10);
            } else if (content.length() > 14) {
                text = ">" + content.substring(14);
            }
            break;
        case '\`' : // Two channel hex telemetry
            try {
                text = "T#MIC" +
                    format("000", Integer.parseInt(content.substring(10,12), 16)) + "," +
                    format("000", Integer.parseInt(content.substring(12,14), 16));
            } catch (NumberFormatException err) { }
            break;
        case '\`' : // Five channel hex telemetry
            try {
                text = "T#MIC" +
                    format("000", Integer.parseInt(content.substring(10,12), 16)) + "," +
                    format("000", Integer.parseInt(content.substring(12,14), 16)) + "," +
                    format("000", Integer.parseInt(content.substring(14,16), 16)) + "," +
                    format("000", Integer.parseInt(content.substring(16,18), 16)) + "," +
                    format("000", Integer.parseInt(content.substring(18,20), 16));
            } catch (NumberFormatException err) { }
            break;
        case 0x1d : // Five channel binary telemetry
            text = "T#MIC" +
                format("000", bytecontent[10]) + "," +
                format("000", bytecontent[11]) + "," +
                format("000", bytecontent[12]) + "," +
                format("000", bytecontent[13]) + "," +
                format("000", bytecontent[14]);
            break;
        default: text = content.substring(9);
            break;
    }
    return text.trim();
}

// Format number into string
private static String format(String pattern, double value ) {
    DecimalFormat myFormatter = new DecimalFormat(pattern);
    return myFormatter.format(value);
}
}

```

---

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### 13. [aprsspec] Re: [aprssig] Telemetry Format....

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Sat, 19 Feb 2000 09:51:45 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-66652-2000.02.19-08.53.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

This is VERY interesting, I am glad you are doing this..

I would be more than happy to work with you on this.. Also, this discussion should probably be moved to the APRSSPEC list.. I am copying that list with this reply.

Keith Sproul

>The APRS specification gives a definition for Telemetry Data,  
>but limits it to 8 bits.  
>I'm building a system that uses a pair of the nifty new Linear Tech LTC2400  
>8 pin 24 bit ratio metric A/D's to measure some precision pressure sensors.  
>  
>I know I can just create my own experimental packets with whatever  
>Data I want in them, but I would prefer to propose a "standard" way  
>of encoding extended precision telemetry.  
>  
>Paul (K17JG)  
>  
>  
>  
>  
>---  
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|                                     |                     |
|-------------------------------------|---------------------|
| Keith Sproul                        | 732 445-3695 Office |
| Student Housing Network Coordinator | 732 445-2968 Fax    |
| mailto:ksproul@rci.rutgers.edu      | 732 821-4828 Home   |
| http://dorm.rutgers.edu/~ksproul/   | WU2Z                |

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### 14. [aprsspec] Re: [aprssig] Telemetry Format....

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 19 Feb 2000 10:29:37 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-66665-2000.02.19-09.28.21--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

A good baseline might be to consider the AMSAT formats used. I dont have the data in front of me but it may be extensible beyond 8 bits. IT can certainly handle up to 255 channels. And even if it is only 8 bit, then all it takes to do up to 16 bits is just define two adjacent channels for the LSB and MSB. The format was just XX YY .... repeated over and over where XX is the channel number and YY is the value in HEX with space delimiters. The value of this is that not every value has to be present in every packet. Some values can be repeated much more often and slowly chanign values less often... And the packet can be any length.

Disadvantage is that you have 50% overhead by specifying the channel number all the time.

Or, I think the 9600 baud birds use a format of straight binary, with the number of bytes to follow and then a stream of contiguous channels. This is more compact if you are sending every channel every time, but if you dont need all the channels all the time, then this too has inneffeiciencies...

just some thoughts.  
bob

not looked in years. On Sat, 19 Feb 2000, Keith Sproul

wrote:

```
> This is VERY interesting, I am glad you are doing this..
>
> I would be more than happy to work with you on this.. Also, this
> discussion should probably be moved to the APRSSPEC list.. I am
> copying that list with this reply.
>
> Keith Sproul
>
>
> >The APRS specification gives a definition for Telemetry Data,
> >but limits it to 8 bits.
> >I'm building a system that uses a pair of the nifty new Linear Tech LTC2400
> >8 pin 24 bit ratio metric A/D's to measure some precision pressure sensors.
> >
> >I know I can just create my own experimental packets with whatever
> >Data I want in them, but I would prefer to propose a "standard" way
> >of encoding extended precision telemetry.
> >
> >Paul (K17JG)
> >
> >
> >
> >
> >---
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>
> Keith Sproul                732 445-3695 Office
> Student Housing Network Coordinator 732 445-2968 Fax
> mailto:ksproul@rci.rutgers.edu      732 821-4828 Home
> http://dorm.rutgers.edu/~ksproul/    WU2Z
>
> ---
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>
>
```

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapir.org/tapir/html/mic-e.html>

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## 15. [aprssi] MIC-E followup

From: Jonathan Bradshaw <jonathan@mail.nrgup.net>  
Date: Sat, 19 Feb 2000 19:34:14 -0500  
To: "APRS Spec Discussion List" <aprssi@lists.tapir.org>  
Message-ID: <LYR11589-66752-2000.02.19-18.33.47--lyris.aprssi#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

I got a couple of pointers for the MIC-E question I posed. Looks like WA4DSY has tackled this problem and his code provided some information that may need to go into the documentation.

The code is fairly complex and I'm not certain I read his code correctly but it seems that REV 0 (beta) units provide the following differences:

- o Longitude does not use the +100 offset bit
- o Longitude does not subtract 80 when between 180 and 189
- o Longitude does not subtract 190 when between 190 and 199
- o Speed value does not subtract 800 if > 800
- o Course value does not 400 when > 400
- o No table indicator (defaults to /)
- o Symbol may be non-printable (if so its given as \$)

Can anyone confirm or deny this information?

I'm going to attach the newer version of the java class file in case anyone

wishes to play with it.

--

Jonathan Bradshaw <Jonathan@NrgUp.Net> | Call N90XE | ICQ# 41208820 | Linux  
If you need to point-and-click to administer a machine, you have no business  
administering a machine -- (Author unknown)  
[Attachment: MIC\_E.java; text/x-java; 7,776 bytes]

---

## 16. [aprsspec] Re: MIC-E followup

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Sun, 20 Feb 2000 06:47:42 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-66846-2000.02.20-00.53.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-66752-2000.02.19-18.33.47--Ian.Wade#care4free.net@lists.tapr.org>, Jonathan Bradshaw <jonathan@mail.nrgup.net> writes

> Looks like WA4DSY  
> has tackled this problem and his code provided some information that may need  
> to go into the documentation.  
>  
> The code is fairly complex and I'm not certain I read his code correctly but  
> it seems that REV 0 (beta) units provide the following differences:  
>

[snip]

Jonathan, could you provide us with a pointer to DSY's code?

Thanks

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|                                     email: g3nrw@arrl.net |
|                                     |                     |
| APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

---

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## 17. [aprsspec] Re: [aprssig] Telemetry Format

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Sun, 20 Feb 2000 00:00:32 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-66847-2000.02.20-00.58.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The telemetry values, as I read the spec, are ASCII numeric characters.

There is no rational reason to limit the value to 255. A value of 999 takes no more ASCII characters than the value 255 does. This does NOT solve the problem of values with more than 9 1/2 bits (well, a little more since 10 bits is equivalent to value 1023).

Base91 could easily extend this to 753570 (which will accomodate 19 bits and some - B7FA2 hex - if I understand Base91)

This does not quite solve the 24-bit A/D question posed by Paul (K17JG). Perhaps two fields would handle that without any protocol changes (using Base91).

Jim, KA7EHK

---

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## 18. [aprsspec] Re: aprsspec digest: February 20, 2000

From: Jonathan Bradshaw <jonathan@nrgup.net>  
Date: Mon, 21 Feb 2000 09:04:17 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: g3nrw@arrl.net  
Message-ID: <LYR11589-67032-2000.02.21-08.03.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Upon re-checking I have found it was Alan Crosswell, N2Y GK who wrote the original mic\_e.c decode software (my apologies).

It is available as the file "mic\_e.c" inside aprsdigi from:

ftp://ftp.tapr.org/aprssi/linux/aprsdigi-2.0-pre3.tgz

WA4DSY modified it to compile cleanly under g++ and that is available as the file "mic\_e.cpp" from:

ftp://ftp.tapr.org/aprssi/linux/aprsd210.tar.gz

Finally, I have rewritten it to run under Java, added altitude support and am trying to figure out how ambiguity is encoded and that will be available when done from either tapr or sourceforge. However, I'm in the middle of moving home to England (Weybridge, Surrey) in the next couple of months.

On Mon, Feb 21, 2000 at 12:00:21AM -0600, APRS Spec Discussion List digest wrote:

```
> [snip]
>
> Jonathan, could you provide us with a pointer to DSY's code?
>
> Thanks
>
> 73
> Ian, G3NRW
> Technical Editor, APRS Protocol Specification
>
> --
> +-----+
> | APRS on 144.800 [IO91SX] ~55km/35 miles NNW of London |
> | email: g3nrw@arrl.net |
> | |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
> +-----+
```

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## 19. [aprsspec] Help - Position ambiguity in MIC-E

From: Jonathan Bradshaw <jonathan@nrgup.net>  
Date: Mon, 21 Feb 2000 16:53:05 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-67103-2000.02.21-15.52.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I have read the MIC-E protocol up and down a few times but I'm still stuck on the position ambiguity decoding.

For latitude it seems simple enough. You have six 4-bit nibbles which normally could have a value of (in theory) 0-9 but I would assume when position ambiguity is used that nibble has a value > 9. Easy enough to code -- when that nibble is > 9 then substitute a space. Am I on the right track?

Now I look at longitude. Its easy enough to compute but position ambiguity doesn't seem to be done the same way so I am at a loss. I want to make sure my Java class can correctly convert a MIC-E packet into a good position report but this bit (ok, bad pun...) has me stuck!

I'd also like to find some test data. The TH-D7 I have doesn't seem to support that feature so I can't use it for testing.

--

Jonathan Bradshaw <Jonathan@NrgUp.Net> | Call N90XE | ICQ# 41208820 | Linux  
If you need to point-and-click to administer a machine, you have no business administering a machine -- (Author unknown)

---

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---

## 20. [aprsspec] Help with packet decoding....

From: Paul Breed <[Paul@rasdoc.com](mailto:Paul@rasdoc.com)>  
Date: Mon, 21 Feb 2000 18:35:45 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-67118-2000.02.21-17.29.54--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-67118-2000.02.21-17.29.54--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I building a simple KISS TNC based on the Atmel AVR.

I'm having problems with the packet decoding.

I can decode the destination address in the AX25 frame  
I can decode the source address  
I can decode the path WIDE, Relay etc....(The example below has no path)  
By changing single chars in the message I can change single chars in the decoded packet below.

Then when I get to the Data portion it is all garbage.  
It looks like the data is subject to a data scrambling pattern.  
(Common is lots of communications for 1 to 0 balance)  
If it is I can not find it in either the AX.25 or APRS specifications.  
What am I missing?

Sample packet:  
Sending to KL7JG-6 from KL7JG-7 ( a THD7A)  
Message TEST?ISIT.WORKING

The captured packet in HEX:  
<FLAG>  
41 50 4B 30 30 31 30 4B 4C 37 4A 47                      = (APK0010L7JG)  
A0 F7 01 78 9D 25 A6 1B A5 A3 16 1B 10 10  
1D AD A2 29 AA 9F A4 A9 24 2A 97 AB 27 A9  
A5 24 A7 A3 3D 99 86 1F 12 <FLAG>

Any Ideas?  
What am I missing?

I've tried thing assuming I was off by one bit.... I get tantalizingly close  
but nothing works.

Paul (KL7JG)

---

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---

## 21. [aprsspec] Re: Help with packet decoding....

From: Dave VanHorn <[dvanhorn@cedar.net](mailto:dvanhorn@cedar.net)>  
Date: Mon, 21 Feb 2000 18:52:18 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-67123-2000.02.21-17.52.57--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-67123-2000.02.21-17.52.57--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----  
Hash: SHA1

>  
>

>Then when I get to the Data portion it is all garbage.  
>It looks like the data is subject to a data scrambling pattern.  
>(Common is lots of communications for 1 to 0 balance)  
>If it is I can not find it in either the AX.25 or APRS specifications.  
>What am I missing?

Do you handle the bit stuffing yet? <http://www.tapr.org/tapr/html/Fax25.html>

"In order to assure that the flag bit sequence mentioned above doesn't appear accidentally anywhere else in a frame, the sending station shall monitor the bit sequence for a group of five or more contiguous one bits. Any time five contiguous one bits are sent the sending station shall insert a zero bit after the first one bit. During frame reception, any time five contiguous one bits are received, a zero bit immediately following five one bits shall be discarded. "

-----BEGIN PGP SIGNATURE-----

Version: PGP for Personal Privacy 5.5.2

iQA/AwUBOLHPsYF1GDz116VWEQKpbACg0wk8Rrh4hY3W8woThRqtnX4ndsAAoPMU  
gNRq1UwrfnA91UFJwW6unMWs  
=6wpF

-----END PGP SIGNATURE-----

---

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---

## 22. [aprsspec] Re: Help with packet decoding....

From: Tim Salo <salo@networkcs.com>  
Date: Mon, 21 Feb 2000 18:04:01 -0600 (CST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67129-2000.02.21-18.02.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

```
> Date: Mon, 21 Feb 2000 18:35:45 -0500
> From: Paul Breed <Paul@rasdoc.com>
> Subject: [aprsspec] Help with packet decoding....
>
> The captured packet in HEX:
> <FLAG>
> 41 50 4B 30 30 31 30 4B 4C 37 4A 47                =(APK0010L7JG)
>                                     ^^
>                                     ^^
> A0 F7 01 78 9D 25 A6 1B A5 A3 16 1B 10 10
> ^^
> ^^
> 1D AD A2 29 AA 9F A4 A9 24 2A 97 AB 27 A9
> A5 24 A7 A3 3D 99 86 1F 12 <FLAG>
```

Note this two-byte sequence: 47            A0  
which is, in binary            : 0100 0111 1100 0000  
note five contiguous 1's        :            ^^^^^^  
so, delete this bit            :                ^  
and continue decoding.

This extra bit was presumably inserted on transmission; it should be removed on reception.

See paragraph 2.2.6, Bit Stuffing, in the AX.25 2.0 spec  
(<http://www.tapr.org/tapr/html/Fax25.html>), which says:

"In order to assure that the flag bit sequence mentioned above doesn't appear accidentally anywhere else in a frame, the sending station shall monitor the bit sequence for a group of five or more contiguous one bits. Any time five contiguous one bits are sent the sending station shall insert a zero bit after the first one bit. During frame reception, any time five contiguous one bits are received, a zero bit immediately following five one bits shall be discarded."

(Note that the second sentence should read: "shall insert a zero bit after the fifth one bit.")

-tjs  
-tjs

---

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---

## 23. [aprsspec] Re: Help with packet decoding....

From: Tim Salo <salo@networkcs.com>  
Date: Mon, 21 Feb 2000 20:33:51 -0600 (CST)

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67156-2000.02.21-20.32.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

[bogus first line to fool lyris...]  
> Date: Mon, 21 Feb 2000 18:35:45 -0500  
> From: Paul Breed <Paul@rasdoc.com>  
> Subject: [aprsspec] Help with packet decoding....  
>  
> The captured packet in HEX:  
> <FLAG>  
> 41 50 4B 30 30 31 30 4B 4C 37 4A 47                   =(APK0010L7JG)  
> A0 F7 01 78 9D 25 A6 1B A5 A3 16 1B 10 10  
> 1D AD A2 29 AA 9F A4 A9 24 2A 97 AB 27 A9  
> A5 24 A7 A3 3D 99 86 1F 12 <FLAG>

Ok, I was wrong last time.

First, it appears that the characters in the AX.25 call signs are not appropriately shifted left one bit. So, looking at the first 12 bytes, I get (manually, so there are probably some mistakes):

| Was |           | Should be |                       |
|-----|-----------|-----------|-----------------------|
| 41  | 0100 0001 | 82        | A To Call             |
| 50  | 0101 0000 | A0        | P                     |
| 4B  | 0100 1011 | 96        | K                     |
| 30  | 0011 0000 | 60        | 0                     |
| 30  | 0011 0000 | 60        | 0                     |
| 31  | 0011 0001 | 62        | 1                     |
| 30  | 0011 0000 | 60        | reserved bits, ssid=0 |
| 4B  | 0100 1011 | 96        | K From Call           |
| 4C  | 0100 1100 | 98        | L                     |
| 37  | 0011 0111 | 6E        | 7                     |
| 4A  | 0100 1010 | 94        | A                     |
| 47  | 0100 0111 | 8E        | G                     |

After that the pattern isn't so clear...

-tjs

---

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---

## 24. [aprsspec] PAcet Problem solved(long) Thank to all....

From: Paul Breed <Paul@rasdoc.com>  
Date: Mon, 21 Feb 2000 23:20:18 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67172-2000.02.21-22.14.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

My bit stuffing was/is fine.  
My problem was in the part that seemed to be working.  
I was decoding the Address field fine, but the data field was scrambled.

So I did not look in the specification for the Address field.  
AX.25 section 3.12 says all the Address fields are encoded shifted one bit high.  
Since I got the address field to decode correctly I did not look there for my problem.

I was off by one bit from the beginning of the packet.  
I missed the 0 that always seems to follow the flag bit.  
I was detecting that as the end of the flag, not the start of the next char.

Thus my address decoded fine, but I was off by one when I got to the data.

Who would have guessed that  
APK0010KL7JG should not be encoded as APL0010KL7JG

I originally discounted off by one bit, because the data did not look like it was shifted. It was harder to find than I thought it would be.....

Assume you have the ASCII text ABCD

Encodes as hex   41 42 43 44  
Encodes as binary 01000001 01000010 01000011 01000100

So if you are off by 1, one would expect  
10000010 10000100 10000110 1000100X  
82 84 86 88 or 89

BUT it is sent on the wire LSB first..... so it actually encodes as  
10000010 01000010 11000010 00100010

Then off by one gives  
00000100 10000101 10000100 0100010X

And transposed back to human ordered form again  
00100000 10100001 00100001 X0100010  
40 A1 21 A2 or 22

So the pattern 40 A1 21 A2 is only shifted one bit from 41 42 43 44

I used a lot of graph paper to figure this out, then I wrote several simple C programs to read in a set up numbers and spit things out again shifted variable amounts..... My head hurts.

I hope this post was an appropriate use of the group bandwidth.  
I always enjoy seeing how people go about solving problems.  
One of my pet peeves is when someone solves a problem they asked about on a list and then never tells the group what worked.

If you don't think this was appropriate let me know via private mail.

Paul (K17JG) knee deep in the bits...

---

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---

## 25. [aprsspec] Re: PAcet Problem solved(long) Thank to all....

From: Dave VanHorn <[dvanhorn@cedar.net](mailto:dvanhorn@cedar.net)>  
Date: Mon, 21 Feb 2000 23:56:48 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-67182-2000.02.21-22.58.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----  
Hash: SHA1

>

>I used a lot of graph paper to figure this out, then I wrote several  
>simple C programs to read in a set up numbers and spit things out again  
>shifted variable amounts..... My head hurts.

That's how you know it's the right solution :)

Good news!

Did you look at the comm engine I sent you?

-----BEGIN PGP SIGNATURE-----

Version: PGP for Personal Privacy 5.5.2



iQA/AwUBOLIXEIFlGDz1l6VWEQJe3ACg7Gxh8ZFhszT0+5frz9QLE6Fk1ZsAnAs1  
h+eBg0xzCwm9/OMcGnwFzg4s  
=qUak  
-----END PGP SIGNATURE-----

---

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---

## 26. [aprsspec] Re: PAcet Problem solved(long) Thank to all....

From: "Ev Tupis (W2EV)" <[propnet@greeceny.com](mailto:propnet@greeceny.com)>  
Date: Tue, 22 Feb 2000 01:04:51 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-67197-2000.02.22-00.03.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Wow. What a super thread. Thanks to everyone who participated. I learned plenty. Nice overall recap, Paul!

Warmly,  
Ev, W2EV

Paul Breed wrote:

>  
> My bit stuffing was/is fine.  
> My problem was in the part that seemed to be working.  
> I was decoding the Address field fine, but the data field was scrambled.  
>  
> So I did not look in the specification for the Address field.  
> AX.25 section 3.12 says all the Address fields are encoded shifted one  
> bit high.  
> Since I got the address field to decode correctly I did not look there for  
> my problem.  
>  
> I was off by one bit from the beginning of the packet.  
> I missed the 0 that always seems to follow the flag bit.  
> I was detecting that as the end of the flag, not the start of the next char.  
>  
> Thus my address decoded fine, but I was off by one when I got to the data.  
>  
> Who would have guessed that  
> APK0010KL7JG should not be encoded as APL0010KL7JG  
>  
> I originally discounted off by one bit, because the data did not look like  
> it was shifted. It was harder to find than I thought it would be.....  
>  
> Assume you have the ASCII text ABCD  
>  
> Encodes as hex 41 42 43 44  
> Encodes as binary 01000001 01000010 01000011 01000100  
> So if you are off by 1, one would expect  
> 10000010 10000100 10000110 1000100X  
> 82 84 86 88 or 89  
>  
> BUT it is sent on the wire LSB first..... so it actually encodes as  
> 10000010 01000010 11000010 00100010  
> Then off by one gives  
> 00000100 10000101 10000100 0100010X  
> And transposed back to human ordered form again  
> 00100000 10100001 00100001 X0100010  
> 40 A1 21 A2 or 22  
>  
> So the pattern 40 A1 21 A2 is only shifted one bit from 41 42 43 44  
>  
> I used a lot of graph paper to figure this out, then I wrote several simple  
> C programs to read in a set up numbers and spit things out again shifted  
> variable amounts..... My head hurts.  
>  
> I hope this post was an appropriate use of the group bandwidth.  
> I always enjoy seeing how people go about solving problems.  
> One of my pet peeves is when someone solves a problem they asked about on  
> a list and then never tells the group what worked.  
>  
> If you don't think this was appropriate let me know via private mail.  
>  
> Paul (K17JG) knee deep in the bits...  
>

>  
>  
> ---  
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--  
PropNET: A digital wireless  
data network designed to  
plot band openings in near  
real-time. Intreagued?  
<http://go.to/propnet>  
  
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## 27. [aprsspec] Re: Help with packet decoding

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Tue, 22 Feb 2000 00:12:00 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67203-2000.02.22-01.10.24--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Are you sure that you have the correct number of data bits? And, are  
treating parity correctly? And, correct number of stop bits.

All these things can create the sort of pattern-errors you have observed.  
Incidentally, I am REALLY interested in what you are doing with AVR. Which  
one are you using? Is this for a commercial product or will the code be  
available?

Many thanks...

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.U.S.A.NOAM   near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 28. [aprsspec] Re: Help - Position ambiguity in MIC-E

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Tue, 22 Feb 2000 08:46:02 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67208-2000.02.22-02.45.31--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-67103-2000.02.21-15.52.34--Ian.Wade#care4free.net@lists.tapr.org>, Jonathan Bradshaw <jonathan@nrgup.net> writes  
>I have read the MIC-E protocol up and down a few times but I'm still stuck on  
>the position ambiguity decoding.  
>

Jonathan, which description of the Mic-E protocol are you reading? Every  
description I've read has significant errors/omissions/misleading  
statements in it, which I've attempted to correct in the APRS Protocol  
Reference.

>For latitude it seems simple enough. You have six 4-bit nibbles which normally  
>could have a value of (in theory) 0-9 but I would assume when position  
>ambiguity is used that nibble has a value > 9. Easy enough to code  
>-- when that nibble is > 9 then substitute a space. Am I on the right track?

Take a look at the table at the top of page 38 of the APRS Protocol  
Reference (draft version 1.0.1g, 3 December 1999). This is the definitive  
and correct definition of all the possible legal latitude values. The

position ambiguity character (space) occurs when the ASCII address character (after right shifting one bit) is "K" or "L".

[BTW, be very careful about using raw nibbles to define the latitude values. This works OK if the Message A/B/C bit is "0" or \*standard\* "1". But it does \*NOT\* work if this bit is \*custom\* "1". In that case, you need to subtract 1 from the nibble to get the latitude digit. This is where most of the earlier Mic-E documentation fell down.

For example, if the incoming ASCII character is "G", the corresponding hex value is 47, so the second nibble is 7. You then need to subtract 1 from this to get the latitude digit: 6.

If I were implementing code, I would use a table lookup approach, based on the table at the top of page 38. This way you don't need to think about special rules, and it would probably run faster].

>  
>Now I look at longitude. Its easy enough to compute but position ambiguity  
>doesn't seem to be done the same way so I am at a loss.

Position ambiguity is not specified in the longitude value. The longitude position ambiguity is assumed to be the same as the latitude position ambiguity, as defined above. (This is not made clear in the Protocol Reference -- I will be including a statement to this effect in the next release).

P.S. I assume you are also aware that for longitudes up to 9 degrees the longitude offset bit (+100 degrees) is \*set\*? This has caught out at least one other software developer).

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 29. [aprsspec] Re: Help - Position ambiguity in MIC-E

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 22 Feb 2000 09:06:32 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: wb4apr@amsat.org, aprsspec@lists.tapr.org  
Message-ID: <LYR11589-67219-2000.02.22-08.04.51--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 21 Feb 2000, Jonathan Bradshaw wrote:

> I have read the MIC-E protocol up and down a few times but I'm still stuck on  
> the position ambiguity decoding.  
>  
> For latitude it seems simple enough. You have six 4-bit nibbles which normally  
> could have a value of (in theory) 0-9 but I would assume when position  
> ambiguity is used that nibble has a value > 9. Easy enough to code  
> -- when that nibble is > 9 then substitute a space. Am I on the right track?

Yes  
>  
> Now I look at longitude. Its easy enough to compute but position ambiguity  
> doesn't seem to be done the same way so I am at a loss. I want to make  
> sure my Java class can correctly convert a MIC-E packet into a good  
> position report but this bit (ok, bad pun...) has me stuck!

AMbiguity is only encoded in LATITUDE. But it applies in both  
directions.. (longitude too)

>  
> I'd also like to find some test data. The TH-D7 I have doesn't seem to  
> support that feature so I can't use it for testing.

Yes, someone needs to build a test file....:-(

Bob

---

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### 30. [aprsspec] APRS SPEC

From: "Sadowski, Allan" <[allan.sadowski@ncshp.org](mailto:allan.sadowski@ncshp.org)>  
Date: Tue, 22 Feb 2000 09:21:56 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-67221-2000.02.22-08.14.40--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-67221-2000.02.22-08.14.40--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Let me say first that I am certainly thankful that a spec was finally delivered - kudo's to those who worked hard to make it happen... and I think the results are starting to show with some of the Super questions here - involving developing projects ..

Bob's comment about a test set brought on this posting...

Is a revised document imminent? What's next - the test set? Extensions? Any feedback about the future would be greatly appreciated..

Thanks again for the effort..

ALOHA  
AH6LS

---

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---

### 31. [aprsspec] Re: Help - Position ambiguity in MIC-E

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Tue, 22 Feb 2000 15:02:48 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-67247-2000.02.22-10.05.23--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-67247-2000.02.22-10.05.23--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR14779-67219-2000.02.22-08.04.51--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-67219-2000.02.22-08.04.51--Ian.Wade#care4free.net@lists.tapr.org)>, Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes  
>On Mon, 21 Feb 2000, Jonathan Bradshaw wrote:

>  
>> I have read the MIC-E protocol up and down a few times but I'm still stuck on  
>> the position ambiguity decoding.  
>>  
>> For latitude it seems simple enough. You have six 4-bit nibbles which normally  
>> could have a value of (in theory) 0-9 but I would assume when position  
>> ambiguity is used that nibble has a value > 9. Easy enough to code  
>> -- when that nibble is > 9 then substitute a space. Am I on the right track?  
>  
>  
>Yes

NO, NO, NO, NO !!!! This is exactly where early documentation was incorrect/incomplete/misleading.

For the reason I stated in my reply to Jonathan earlier today, that algorithm O-N-L-Y works if the Message A/B/C bit is a "0" or a S-T-A-N-D-A-R-D "1".

See the table at the top of page 38 in the spec.

If you receive a letter "J", the corresponding hex value is 0x4a; i.e. the second nibble ("a") is > 9. However, this is NOT an ambiguity space, it is latitude digit 9, BECAUSE THE MESSAGE A/B/C BIT IS A \*\*\*CUSTOM\*\*\* "1". THAT IS, WHEN THE CUSTOM "1" BIT IS SET, YOU HAVE TO SUBTRACT 1 FROM THE NIBBLE TO OBTAIN THE LATITUDE DIGIT.

I repeat: you should study the table on page 38 for the COMPLETE AND ACCURATE definition of valid latitude characters. Earlier documentation didn't say anything about how to handle bytes containing CUSTOM message "1" bits (or glossed over it very briefly and misleadingly), and many people seem to be unaware that you don't treat such latitude digits the same way as for bytes containing STANDARD message "1" bits.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I09ISX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 32. [aprsspec] RE: Help - Position ambiguity in MIC-E

From: "Rob Wittner" <rmw@rwa-inc.com>  
Date: Tue, 22 Feb 2000 13:18:20 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67268-2000.02.22-12.15.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Just when I thought my Mic-E parser was working correctly... :-)

-Rob  
KZ5RW

-----Original Message-----

From: bounce-aprsspec-11697@lists.tapr.org  
[mailto:bounce-aprsspec-11697@lists.tapr.org] On Behalf Of Ian Wade  
Sent: Tuesday, February 22, 2000 10:03 AM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Re: Help - Position ambiguity in MIC-E

In article <LYR14779-67219-2000.02.22-08.04.51--Ian.Wade#care4free.net@lists.tapr.org>, Bob Bruninga <bruninga@nadn.navy.mil> writes  
>On Mon, 21 Feb 2000, Jonathan Bradshaw wrote:  
>  
>> I have read the MIC-E protocol up and down a few times but I'm still stuck on  
>> the position ambiguity decoding.  
>>  
>> For latitude it seems simple enough. You have six 4-bit nibbles which normally  
>> could have a value of (in theory) 0-9 but I would assume when position  
>> ambiguity is used that nibble has a value > 9. Easy enough to code  
>> -- when that nibble is > 9 then substitute a space. Am I on the right track?  
>  
>  
>Yes

NO, NO, NO, NO !!!! This is exactly where early documentation was incorrect/incomplete/misleading.

For the reason I stated in my reply to Jonathan earlier today, that algorithm O-N-L-Y works if the Message A/B/C bit is a "0" or a S-T-A-N-D-A-R-D "1".

See the table at the top of page 38 in the spec.

If you receive a letter "J", the corresponding hex value is 0x4a; i.e. the second nibble ("a") is > 9. However, this is NOT an ambiguity space, it is latitude digit 9, BECAUSE THE MESSAGE A/B/C BIT IS A \*\*\*CUSTOM\*\*\* "1". THAT IS, WHEN THE CUSTOM "1" BIT IS SET, YOU HAVE TO SUBTRACT 1 FROM THE NIBBLE TO OBTAIN THE LATITUDE DIGIT.

I repeat: you should study the table on page 38 for the COMPLETE AND

ACCURATE definition of valid latitude characters. Earlier documentation didn't say anything about how to handle bytes containing CUSTOM message "1" bits (or glossed over it very briefly and misleadingly), and many people seem to be unaware that you don't treat such latitude digits the same way as for bytes containing STANDARD message "1" bits.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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### 33. [aprsspec] Re: Help - Position ambiguity in MIC-E

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Tue, 22 Feb 2000 20:48:20 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67352-2000.02.22-14.47.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <NCBBLCALKLCLLFGBMFCMCEELDEAA.rmw@rwa-inc.com>, Rob Wittner  
<rmw@rwa-inc.com> writes

```
>
>Just when I thought my Mic-E parser was working correctly... :-)
>
> -Rob
> KZ5RW
>
```

If it's any help, I've just scribbled away for a few minutes in QBASIC to produce a very quick n' dirty program to decode the MIC-E destination address. Enter the 6 characters of the address and the program will tell you the latitude, longitude offset, E/W and the three message bits. (It's a perfect example of a well-designed structured program incorporating all the latest object-oriented techniques, serving as a model for java/xml implementations ---- NOT! :-))

```
~~~~~
REM MICDEC.BAS
REM A QUICK N' DIRTY MIC-E DESTINATION ADDRESS FIELD DECODER
REM by Ian Wade, G3NRW (g3nrw@arrl.net)
REM 22 February 2000
REM
REM There is no error handling in this simple demo program.
REM Input the destination address in the right format and the
REM program will work. Input it in the wrong format and it
REM probably won't.
```

CLS

```
DIM row$(43)
DATA "00 0 0 S+0 E"
DATA "10 0 0 S+0 E"
DATA "20 0 0 S+0 E"
DATA "30 0 0 S+0 E"
DATA "40 0 0 S+0 E"
DATA "50 0 0 S+0 E"
DATA "60 0 0 S+0 E"
DATA "70 0 0 S+0 E"
DATA "80 0 0 S+0 E"
DATA "90 0 0 S+0 E"
DATA "- - - - -"
DATA "- - - - -"
```

```

DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "01c1c1c--"
DATA "11c1c1c--"
DATA "21c1c1c--"
DATA "31c1c1c--"
DATA "41c1c1c--"
DATA "51c1c1c--"
DATA "61c1c1c--"
DATA "71c1c1c--"
DATA "81c1c1c--"
DATA "91c1c1c--"
DATA "?1c1c1c--"
DATA "?0 0 0 S+0 E"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "01s1s1sN+100W"
DATA "11s1s1sN+100W"
DATA "21s1s1sN+100W"
DATA "31s1s1sN+100W"
DATA "41s1s1sN+100W"
DATA "51s1s1sN+100W"
DATA "61s1s1sN+100W"
DATA "71s1s1sN+100W"
DATA "81s1s1sN+100W"
DATA "91s1s1sN+100W"
DATA "?1s1s1sN+100W"

FOR x = 1 TO 43
READ row$(x)
NEXT x

MAIN: INPUT "Input a 6-character destination address (e.g. 1P2SW7): ", D$

PRINT "Lat: ";

FOR n = 1 TO 6
L = ASC(MID$(D$, n, 1)) - 47
IF L > 42 THEN L = L - 32

ON n GOTO one, two, three, four, five, six
one: A$ = MID$(row$(L), 2, 2): GOTO xout
two: b$ = MID$(row$(L), 4, 2): GOTO xout
three: c$ = MID$(row$(L), 6, 2): GOTO xout
four: ns$ = MID$(row$(L), 8, 1): GOTO xout
five: offset$ = MID$(row$(L), 9, 4): GOTO xout
six: we$ = MID$(row$(L), 13, 1): GOTO xout

xout: PRINT MID$(row$(L), 1, 1);

NEXT n

PRINT " "; ns$; " offset: "; offset$; " long: "; we$;
PRINT " Message A: "; A$; " B: "; b$; " C: "; c$
PRINT

GOTO MAIN

~~~~~

73
Ian, G3NRW
Technical Editor, APRS Protocol Specification

--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|                                     email: g3nrw@arrl.net |
|                                     |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+

---

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```

### 34. [aprrspec] Re: APRS SPEC

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Tue, 22 Feb 2000 16:49:27 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: aprrspec@lists.tapr.org  
Message-ID: <LYR11589-67359-2000.02.22-15.49.27--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
>Whats Next?

One thing that will be worked on and then submitted to this group is the Hurricane data.. The current documented implementation is not complete.

Another thing that will be worked on is Shelter information. There is a LARGE push on this from the people in Florida including the American Red Cross.

On both of these, we (those that have interest in this that are pushing me) will figure out 'workable' solutions and then post them here for comment etc, following the procedures put forth by the APRS Working Group charter.

Keith Sproul

>Let me say first that I am certainly thankful that a spec was finally  
>delivered - kudo's to those who worked hard to make it happen... and I think  
>the results are starting to show with some of the Super questions here -  
>involving developing projects ..  
>  
>Bob's comment about a test set brought on this posting...  
>  
>Is a revised document imminent? What's next - the test set? Extensions? Any  
>feedback about the future would be greatly appreciated..  
>  
>Thanks again for the effort..  
>  
>ALOHA  
>AH6LS  
>  
>---  
>You are currently subscribed to aprrspec as: ksproul@vger.rutgers.edu  
>To unsubscribe send a blank email to leave-aprrspec-11589P@lists.tapr.org

Keith Sproul                      732 445-3695 Office  
Student Housing Network Coordinator    732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu        732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/      WU2Z

---  
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---

### 35. [aprrspec] Re: Help - Position ambiguity in MIC-E

From: Bill Diaz <billdiaz@megsinet.net>  
Date: Tue, 22 Feb 2000 16:08:39 -0600  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-67367-2000.02.22-16.42.08--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
Ian,

Qbasic is cruel and unusual punishment for some of us. Much easier in many modern development environments to mask and shift the bits as needed rather than dealing with a lookup table.

Thanks for the Qbasic example, it will keep me from yearning for the 'good old days'. <grin>.

I'm sure users who still use qbasic will benefit, however.

Bill KC9XG

On Tuesday, February 22, 2000 2:48 PM, Ian Wade [SMTP:Ian.Wade@care4free.net] wrote:  
> In article <NCBBLCALKLCLLFGBMFCMCEELDEAA.rmw@rwa-inc.com>, Rob Wittner  
> <rmw@rwa-inc.com> writes  
> >



```

> >Just when I thought my Mic-E parser was working correctly... :-)
> >
> >   -Rob
> >   KZ5RW
> >
>
> If it's any help, I've just scribbled away for a few minutes in QBASIC to
> produce a very quick n' dirty program to decode the MIC-E destination
> address. Enter the 6 characters of the address and the program will tell you
> the latitude, longitude offset, E/W and the three message bits. (It's a
> perfect example of a well-designed structured program incorporating all the
> latest object-oriented techniques, serving as a model for java/xml
> implementations ---- NOT! :-))
>
> ~~~~~
>
> REM MICDEC.BAS
> REM A QUICK N' DIRTY MIC-E DESTINATION ADDRESS FIELD DECODER
> REM by Ian Wade, G3NRW (g3nrw@arrl.net)
> REM 22 February 2000
> REM
> REM There is no error handling in this simple demo program.
> REM Input the destination address in the right format and the
> REM program will work. Input it in the wrong format and it
> REM probably won't.
>
> CLS
>
> DIM row$(43)
> DATA "00 0 0 S+0 E"
> DATA "10 0 0 S+0 E"
> DATA "20 0 0 S+0 E"
> DATA "30 0 0 S+0 E"
> DATA "40 0 0 S+0 E"
> DATA "50 0 0 S+0 E"
> DATA "60 0 0 S+0 E"
> DATA "70 0 0 S+0 E"
> DATA "80 0 0 S+0 E"
> DATA "90 0 0 S+0 E"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "01c1c1c--"
> DATA "11c1c1c--"
> DATA "21c1c1c--"
> DATA "31c1c1c--"
> DATA "41c1c1c--"
> DATA "51c1c1c--"
> DATA "61c1c1c--"
> DATA "71c1c1c--"
> DATA "81c1c1c--"
> DATA "91c1c1c--"
> DATA "?1c1c1c--"
> DATA "?0 0 0 S+0 E"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "-- - - -"
> DATA "01s1s1sN+100W"
> DATA "11s1s1sN+100W"
> DATA "21s1s1sN+100W"
> DATA "31s1s1sN+100W"
> DATA "41s1s1sN+100W"
> DATA "51s1s1sN+100W"
> DATA "61s1s1sN+100W"
> DATA "71s1s1sN+100W"
> DATA "81s1s1sN+100W"
> DATA "91s1s1sN+100W"
> DATA "?1s1s1sN+100W"
>
> FOR x = 1 TO 43
> READ row$(x)
> NEXT x
>
> MAIN: INPUT "Input a 6-character destination address (e.g. 1P2SW7): ", D$
>

```

```

> PRINT "Lat: ";
>
> FOR n = 1 TO 6
> L = ASC(MID$(D$, n, 1)) - 47
> IF L > 42 THEN L = L - 32
>
> ON n GOTO one, two, three, four, five, six
> one:  A$ = MID$(row$(L), 2, 2): GOTO xout
> two:  b$ = MID$(row$(L), 4, 2): GOTO xout
> three: c$ = MID$(row$(L), 6, 2): GOTO xout
> four: ns$ = MID$(row$(L), 8, 1): GOTO xout
> five: offset$ = MID$(row$(L), 9, 4): GOTO xout
> six:  we$ = MID$(row$(L), 13, 1): GOTO xout
>
> xout: PRINT MID$(row$(L), 1, 1);
>
> NEXT n
>
> PRINT " "; ns$; "      offset: "; offset$; "      long: "; we$;
> PRINT "      Message A: "; A$; " B: "; b$; " C: "; c$
> PRINT
>
> GOTO MAIN
>
> ~~~~~
>
> 73
> Ian, G3NRW
> Technical Editor, APRS Protocol Specification
>
> --
> +-----+
> | APRS on 144.800 [I0915X]      ~55km/35 miles NNW of London |
> |                               email: g3nrw@arrl.net          |
> |                               |                              |
> | APRS PROTOCOL SPEC:  http://www.tapr.org/tapr/html/Faprswg.html |
> +-----+
>
> ---
> You are currently subscribed to aprsspec as: billdiaz@megsinet.net
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>
> ---
> You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

```

### 36. [aprsspec] Re: APRS SPEC

```

From: John Ackermann <jra@febo.com>
Date: Tue, 22 Feb 2000 17:53:01 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>, jra@meow.febo.com
Message-ID: <LYR11589-67370-2000.02.22-16.51.16--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

I've been remiss in not posting an update recently. Sorry about that. We had a huge batch of corrections, suggestions, etc., from the comment period, and that, combined with real-life work conflicts for a couple of folks, has slowed down the final revision. But Ian is working on it, and I hope the final release won't be delayed too much longer.

By the way -- the comments received have been very helpful, and incorporating them will make the final Protocol Spec a much better document.

73,  
John N8UR  
jra@febo.com

```

-----
In message <LYR11592-67221-2000.02.22-08.14.40--n8ur#tapr.org@lists.tapr.org>,
"Sadowski, Allan" writes:
>Let me say first that I am certainly thankful that a spec was finally
>delivered - kudo's to those who worked hard to make it happen... and I think
>the results are starting to show with some of the Super questions here -
>involving developing projects ..
>
>Bob's comment about a test set brought on this posting...
>
>Is a revised document imminent? What's next - the test set? Extensions? Any
>feedback about the future would be greatly appreciated..
>

```

```
>Thanks again for the effort..
>
>ALPHA
>AH6LS
>
>---
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```

---

### 37. [aprsspec] Re: Help - Position ambiguity in MIC-E

```
From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 23 Feb 2000 07:43:13 +0000
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-67490-2000.02.23-01.54.37--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In article <LYR14779-67367-2000.02.22-16.42.08--Ian.Wade#care4free.net@lists.tapr.org>, Bill Diaz <billdiaz@megsinet.net> writes
>Ian,
>
>Qbasic is cruel and unusual punishment for some of us. Much easier in many
>modern development environments to mask and shift the bits as needed rather
>than dealing with a lookup table.
```

I know, I know! It's cruel for me too -- I haven't written real code for years now :-)) As for table lookup, my early programming days in the mid 1960s were (mis)spent on radar and real-time process control apps, when machines were very slow and we had to squeeze every ounce of speed out of 'em. There weren't enough machine cycles available for all that new fangled bit shiftin' malarky, so table lookup was the only way to go, and old habits die hard. I won't let it happen again!

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

```
---
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```

---

### 38. [aprsspec] MIC-E Destination Address Decoder -- update

```
From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 23 Feb 2000 10:06:30 +0000
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-67496-2000.02.23-04.10.36--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

I've updated the QBASIC fragment I posted yesterday, to include decoding of the message type. I've done this to highlight the little known fact that if any of the message bits A/B/C contain a \*custom\* "1", the message is a \*custom\* message (even if any of the other bits happen to be a \*standard\* "1"). In other words, the presence of a custom "1" forces all other "1" bits to be treated as custom "1"s also. This is not clear in the draft version of the spec.

```
~~~~~
REM MICDEC.BAS
REM A QUICK N' DIRTY MIC-E DESTINATION ADDRESS FIELD DECODER
REM by Ian Wade, G3NRW (g3nrw@arrrl.net)
REM 23 February 2000
REM
REM There is no error handling in this simple demo program.
REM Input the destination address in the right format and the
REM program will work. Input it in the wrong format and it
REM probably won't.

REM NOTE: If ANY of the Message A/B/C bits is a Custom-1, the
REM message is a *Custom* message, EVEN IF ANY OF THE
```

REM           REMAINING BITS HAPPENS TO BE A STANDARD-1.

CLS

```
DIM row$(43)
DATA "00 0 0 S+0 E"
DATA "10 0 0 S+0 E"
DATA "20 0 0 S+0 E"
DATA "30 0 0 S+0 E"
DATA "40 0 0 S+0 E"
DATA "50 0 0 S+0 E"
DATA "60 0 0 S+0 E"
DATA "70 0 0 S+0 E"
DATA "80 0 0 S+0 E"
DATA "90 0 0 S+0 E"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "01c1c1c-- -"
DATA "11c1c1c-- -"
DATA "21c1c1c-- -"
DATA "31c1c1c-- -"
DATA "41c1c1c-- -"
DATA "51c1c1c-- -"
DATA "61c1c1c-- -"
DATA "71c1c1c-- -"
DATA "81c1c1c-- -"
DATA "91c1c1c-- -"
DATA "?1c1c1c-- -"
DATA "?0 0 0 S+0 E"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "01s1s1sN+100W"
DATA "11s1s1sN+100W"
DATA "21s1s1sN+100W"
DATA "31s1s1sN+100W"
DATA "41s1s1sN+100W"
DATA "51s1s1sN+100W"
DATA "61s1s1sN+100W"
DATA "71s1s1sN+100W"
DATA "81s1s1sN+100W"
DATA "91s1s1sN+100W"
DATA "?1s1s1sN+100W"

DATA "M7:EMERGENCY "
DATA "M6:Priority "
DATA "M5:Special "
DATA "M4:Committed "
DATA "M3:Returning "
DATA "M2:In Service"
DATA "M1:En Route "
DATA "M0:Off Duty "

DATA "C7:EMERGENCY "
DATA "C6:Custom-6 "
DATA "C5:Custom-5 "
DATA "C4:Custom-4 "
DATA "C3:Custom-3 "
DATA "C2:Custom-2 "
DATA "C1:Custom-1 "
DATA "C0:Custom-0 "

FOR x = 1 TO 43
READ row$(x)
NEXT x

FOR x = 1 TO 8
READ standard$(x)
NEXT x

FOR x = 1 TO 8
READ custom$(x)
NEXT x
```

```

MAIN: INPUT "Input a 6-character destination address (e.g. 1P2SW7): ", D$

PRINT "Lat: ";
custom = 0

FOR n = 1 TO 6
L = ASC(MID$(D$, n, 1)) - 47

IF L > 43 THEN L = L - 32

ON n GOTO one, two, three, four, five, six
one: a$ = MID$(row$(L), 2, 2): IF a$ = "1c" THEN custom = 1: GOTO xout
two: b$ = MID$(row$(L), 4, 2): IF b$ = "1c" THEN custom = 1: GOTO xout
three: c$ = MID$(row$(L), 6, 2): IF c$ = "1c" THEN custom = 1: GOTO xout
four: ns$ = MID$(row$(L), 8, 1): GOTO xout
five: offset$ = MID$(row$(L), 9, 4): GOTO xout
six: we$ = MID$(row$(L), 13, 1): GOTO xout

xout: PRINT MID$(row$(L), 1, 1);

NEXT n

PRINT " "; ns$; " offset: "; offset$; " long: "; we$; " Message: ";

m = VAL(MID$(a$, 1, 1)) * 4 + VAL(MID$(b$, 1, 1)) * 2 + VAL(MID$(c$, 1, 1)) + 1

IF custom = 1 THEN PRINT custom$(m) ELSE PRINT standard$(m)

PRINT

GOTO MAIN

```

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```

--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| | |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+

```

---
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### 39. [aprsspec] MIC-E Destination Address Decoder -- update

From: Lief Hendrickson <lhendric@mail.sdsu.edu>  
Date: Thu, 24 Feb 2000 08:26:09 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-67756-2000.02.24-10.28.46--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ian,  
Thanks for posting the QBASIC code to the list. It's very helpful in describing how the decoding is done- even if other programming languages may be more efficient.  
-Lief Hendrickson

At 12:00 AM 2/24/00 -0600, you wrote:  
>Subject: MIC-E Destination Address Decoder -- update  
>From: Ian Wade <Ian.Wade@care4free.net>  
>Date: Wed, 23 Feb 2000  
>  
>I've updated the QBASIC fragment I posted yesterday, to include decoding of the  
>message type. I've done this to highlight the little known fact that if any of  
>the message bits A/B/C contain a \*custom\* "1", the message is a \*custom\*  
>message (even if any of the other bits happen to be a \*standard\* "1"). In  
>other  
>words, the presence of a custom "1" forces all other "1" bits to be treated as

>custom "1"s also. This is not clear in the draft version of the spec.  
[...stuff deleted...]

---

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---

## 40. [aprsspec] Questions about the 101g draft

From: Patrick <[f5orf@filnet.fr](mailto:f5orf@filnet.fr)>  
Date: Thu, 24 Feb 2000 23:47:00 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-67802-2000.02.24-16.47.29--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-67802-2000.02.24-16.47.29--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hi,

I'm just reading the spec draft. Good job.

I'm writing a soft for ELT search and rescue. In France, ham are the only terrestrial radioelectric research team for aircraft disaster.

I was trying last year to understand the aprs message format, but it seems so confusing for me than I preferred to develop my own protocol. The draft you've published was more understandable. Then I will add a compatibility with aprs messages.

But I've some remarks/questions:

page 21: what is the datum for all the coordinates? Is it WGS 84? The NMEA is based on the WGS 84, then I think it's better to use the same for the aprs message. The same coordinates in another datum could cause errors up to 1000 meters from the real position.

page 25: How was choosed the power step? The important thing in knowing the power is to calculate the attenuation path to have an idee of the range. This is proportional to a log scale. Why not use a log scale in the choice of the power step? There is 6 db between 1 and 4 watts; 3 between 4 and 9; 2 between 16 and 25; 1 between 25 and 36, 2 again between 49 and 64, 1 between 64 and 81... Very strange...

What is the antenna gain reference. Is it dBi, dBd or dBj (japanese dB especially on comet antennas HI)?

Everywhere:

For the differents lenght units, I know that you are well attached to the imperial units, but as you know, there's an International System Unit standard which recommand the use of meters instead of feet and miles. Maybe a translation of the different constants in the two standards and the addition of the unit in the messages will internationalise your protocol.

Good work and 73.

Patrick, f5orf

---

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To unsubscribe send a blank email to [leave-aprsspec-11589P@lists.tapr.org](mailto:leave-aprsspec-11589P@lists.tapr.org)

---

## 41. [aprsspec] Mic-E Decoder -- upgraded to handle longitude/speed/course

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Tue, 29 Feb 2000 21:01:54 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-68610-2000.02.29-15.02.02--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-68610-2000.02.29-15.02.02--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Sorry guys. Although I promised not to post any more QBASIC, I'm on a roll now! Here is a complete QBASIC program to decode the destination callsign and the longitude, speed and course. I know the coding is kludgy, but I really wrote it to check out certain things for the APRS Protocol Spec.

As far as I know it works OK. However, if you find any bugs, please let me know.

Hint: Log some IGATE output, then look for the Mic-E transmissions. Very often a Mic-E station transmits a conventional posit just before/after the Mic-E transmission, so it's possible to correlate the two.

```
~~~~~  
REM MICDEC.BAS  
REM A QUICK N' DIRTY MIC-E DATA DECODER  
REM by Ian Wade, G3NRW (g3nrw@arrl.net)  
REM 29 February 2000  
REM  
REM Decodes the 6-byte destination callsign, containing:
```

```

REM Latitude, North/South bit, West/East bit, Longitude
REM Offset, Message Code.
REM
REM Decodes the first 7 bytes of the Information field:
REM APRS Data Type Identifier, Longitude, Speed, Course.
REM
REM Understands Position Ambiguity (minutes and hundredths
REM of minutes).

REM Error handling in this simple demo program is rudimentary
REM and far from bombproof.

REM Input the destination address and Information field in
REM the right format and the program will work. Input it in
REM the wrong format and it probably won't.

REM NOTE: If ANY of the Message A/B/C bits is a Custom-1, the
REM message is a *Custom* message, EVEN IF ANY OF THE
REM REMAINING BITS HAPPENS TO BE A STANDARD-1.

```

```

REM NOTE: This program does not support Rev 0 beta units.

```

```

CLS

```

```

DIM row$(43)
DATA "00 0 0 S+0 E"
DATA "10 0 0 S+0 E"
DATA "20 0 0 S+0 E"
DATA "30 0 0 S+0 E"
DATA "40 0 0 S+0 E"
DATA "50 0 0 S+0 E"
DATA "60 0 0 S+0 E"
DATA "70 0 0 S+0 E"
DATA "80 0 0 S+0 E"
DATA "90 0 0 S+0 E"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "01c1c1c-- -"
DATA "11c1c1c-- -"
DATA "21c1c1c-- -"
DATA "31c1c1c-- -"
DATA "41c1c1c-- -"
DATA "51c1c1c-- -"
DATA "61c1c1c-- -"
DATA "71c1c1c-- -"
DATA "81c1c1c-- -"
DATA "91c1c1c-- -"
DATA "?1c1c1c-- -"
DATA "?0 0 0 S+0 E"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "-- - - - -"
DATA "01s1s1sN+100W"
DATA "11s1s1sN+100W"
DATA "21s1s1sN+100W"
DATA "31s1s1sN+100W"
DATA "41s1s1sN+100W"
DATA "51s1s1sN+100W"
DATA "61s1s1sN+100W"
DATA "71s1s1sN+100W"
DATA "81s1s1sN+100W"
DATA "91s1s1sN+100W"
DATA "?1s1s1sN+100W"

DATA "EMERGENCY "
DATA "M6:Priority "
DATA "M5:Special "
DATA "M4:Committed "
DATA "M3:Returning "
DATA "M2:In Service"
DATA "M1:En Route "
DATA "M0:Off Duty "

DATA "EMERGENCY "

```

```

DATA "C6:Custom-6 "
DATA "C5:Custom-5 "
DATA "C4:Custom-4 "
DATA "C3:Custom-3 "
DATA "C2:Custom-2 "
DATA "C1:Custom-1 "
DATA "C0:Custom-0 "

FOR x = 1 TO 43
READ row$(x)
NEXT x

FOR x = 1 TO 8
READ STANDARD$(x)
NEXT x

FOR x = 1 TO 8
READ custom$(x)
NEXT x

main: PRINT "+++++"
INPUT "Input the 6-character destination address ----- e.g. S5RW4S : ", d$
LINE INPUT "Input the first 7 bytes of Information field data -- e.g. `}+t15[ : ", i$
PRINT

PRINT "Lat: ";
custom = 0
ambig = 0

FOR n = 1 TO 6
l = ASC(MID$(d$, n, 1)) - 47
IF l > 43 THEN l = l - 32

x$ = MID$(row$(l), 1, 1)

ON n GOSUB one, two, three, four, five, six

NEXT n
GOTO rest

one: PRINT x$;
A$ = MID$(row$(l), 2, 2)
IF A$ = "1c" THEN custom = 1
RETURN

two: PRINT x$; " deg ";
B$ = MID$(row$(l), 4, 2)
IF B$ = "1c" THEN custom = 1
RETURN

three: PRINT x$;
C$ = MID$(row$(l), 6, 2)
IF C$ = "1c" THEN custom = 1
IF x$ = "?" AND ambig = 0 THEN ambig = 3
RETURN

four: PRINT x$; ".";
ns$ = MID$(row$(l), 8, 1)
IF x$ = "?" AND ambig = 0 THEN ambig = 4
RETURN

five: PRINT x$;
offset$ = MID$(row$(l), 10, 3)
IF x$ = "?" AND ambig = 0 THEN ambig = 5
RETURN

six: PRINT x$; " mins ";
we$ = MID$(row$(l), 13, 1)
IF x$ = "?" AND ambig = 0 THEN ambig = 6
RETURN

rest: PRINT ns$; " offset: "; offset$; " long: "; we$; " Message: ";

m = VAL(MID$(A$, 1, 1)) * 4 + VAL(MID$(B$, 1, 1)) * 2 + VAL(MID$(C$, 1, 1)) + 1

IF custom = 1 THEN PRINT custom$(m) ELSE PRINT STANDARD$(m)

ID$ = MID$(i$, 1, 1)

```



```

IF ID$ = "" THEN PRINT "Current GPS Data. Long:"; : GOTO degrees
IF ID$ = "" THEN PRINT "Old GPS Data. Long:"; : GOTO degrees
PRINT "Bad APRS Data Type Identifier": GOTO main

degrees: d = ASC(MID$(i$, 2, 1)) - 28
IF d < 10 OR d > 99 THEN PRINT "Bad long degrees": GOTO main
d = d + VAL(offset$)

IF d > 189 AND d < 200 THEN d = d - 190: PRINT d; : GOTO mins
IF d > 179 AND d < 190 THEN d = d - 80: PRINT d; : GOTO mins
PRINT d;

mins: PRINT "deg ";
m = ASC(MID$(i$, 3, 1)) - 28
IF m < 10 OR m > 69 THEN PRINT "Bad long minutes": GOTO main
IF m > 59 THEN m = m - 60
m = m + 100
m$ = MID$(STR$(m), 3, 2) + "."

h = ASC(MID$(i$, 4, 1)) - 28
IF h < 0 OR h > 99 THEN PRINT "Bad long hundredths": GOTO main
h = h + 100
h$ = MID$(STR$(h), 3, 2) + " mins"

minout$ = m$ + h$

IF ambig = 3 THEN MID$(minout$, 1, 5) = "???.??"
IF ambig = 4 THEN MID$(minout$, 2, 4) = "?..??"
IF ambig = 5 THEN MID$(minout$, 4, 2) = "???"
IF ambig = 6 THEN MID$(minout$, 5, 1) = "?"

PRINT minout$;

sp = ASC(MID$(i$, 5, 1)) - 28
IF sp < 20 OR sp > 99 THEN PRINT "Bad SP+28": GOTO main
IF sp > 79 THEN sp = sp - 80
sp = sp * 10

DC = ASC(MID$(i$, 6, 1)) - 28
IF DC = 193 THEN DC = 96

IF DC < 0 OR DC > 97 THEN PRINT "Bad DC+28": GOTO main
knots = sp + DC \ 10
PRINT "    Speed:"; knots;

course = (DC MOD 10 - 4) * 100

SE = ASC(MID$(i$, 7, 1)) - 28

IF SE < 4 OR SE > 99 THEN PRINT "Bad SE+28": GOTO main

course = course + SE
PRINT "    Course:"; course

GOTO main

```

~~~~~

73
Ian, G3NRW
Technical Editor, APRS Protocol Specification

```

--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+

```

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March 2000

Original source file: aprsspec.0003

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprssid/mail_archive/aprssid.0003

1. [aprssid] test only

From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 1 Mar 2000 07:24:27 +0000
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>
Message-ID: <LYR11589-68709-2000.03.01-01.24.06--lyris.aprssid#tapr.org@lists.tapr.org>
Rendered body type: text/plain

qwerty

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2. [aprssid] test with a very long line

From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 1 Mar 2000 07:31:57 +0000
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>
Message-ID: <LYR11589-68711-2000.03.01-01.31.23--lyris.aprssid#tapr.org@lists.tapr.org>
Rendered body type: text/plain

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## 3. [aprssid] Symbol Questions

From: James Wagner <ka7ehk@yahoo.com>  
Date: Thu, 2 Mar 2000 10:10:36 -0800 (PST)  
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>  
Message-ID: <LYR11589-68868-2000.03.02-12.09.36--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

While implementing the symbols in my new APRS program, the following questions have appeared:

Symbol "/#" - Digipeater (white center)  
what does this mean? Does it mean green star (as in "\#")  
but with a white center rather than overlay char?

Symbol "\W" - NWS Site (options) [w/ overlay]  
what does "(options)" mean?

Symbol "\\_" - Weather Site (green digi) [w/ ov'lay]  
what does "(green digi)" mean?

Symbol "\i" - Indoor short range digi [w/ overlay]  
Does anyone have any suggestions about the symbol?

Symbol "\a" - ARRL ARES etc.  
Is a particular symbol expected here?

Symbol "/&" - HF Gateway  
Folks in the Pacific NW US seem to be using diamond with

A number of the symbols are very difficult to represent graphically. These include "hail", "smoke", "freezing rain", "haze", "earthquake", "snow shower" (as distinct from "snow"), "rain shower" (as distinct from "rain"), "blowing dust/sand", "fog", etc. Are there any thoughts about representing these?

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## 4. [aprssid] More Symbol Questions

From: James Wagner <ka7ehk@yahoo.com>  
Date: Thu, 2 Mar 2000 10:17:12 -0800 (PST)

To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-68871-2000.03.02-12.24.16--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Sorry, the previous message was sent before it was complete.

Symbol "/&" HF Gateway - local use seems to be diamond with overlay of "G". What is expected for this symbol?

Symbol "\<" Advisory - what is this supposed to show?

Symbol "\." Unknown or indeterminate position - if the position is unknown or indeterminate, then there is no position information which will allow it to be

---

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---

## 5. [aprsspec] More and more symbol questions

From: James Wagner <ka7ehk@yahoo.com>  
Date: Thu, 2 Mar 2000 10:37:23 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-68877-2000.03.02-12.37.24--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

My apologies folks.

I have a new keyboard and I am hitting some (unknown) key which causes messages to be sent from the Yahoo mail composition page.

Symbol "\d" DX Spot by Callsign - what is anticipated here?  
A DX symbol with the callsign next to it? Is the callsign in addition to the callsign of the station originating the symbol or does it substitute? How is the callsign specified? I don't see it in the protocol specs anywhere.

Symbol "\c" Civil Defence (RACES)- is this expected to be the circle with a triangle symbol (that used to say "CD" in the center of the triangle)?

Thanks very much for your patience,

Jim Wagner, KA7EHK

---

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## 6. [aprsspec] Re: Symbol Questions

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 2 Mar 2000 15:05:14 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-68885-2000.03.02-14.15.15--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Thu, 2 Mar 2000, James Wagner wrote:

> Symbol "/"# - Digipeater (white center)  
> what does this mean? Does it mean green star (as in "\#")  
> but with a white center rather than overlay char?  
yes

> Symbol "\W" - NWS Site (options) [w/ overlay]

> what does "(options)" mean?  
Anything you want using one of the overlays  
>  
> Symbol "\\_" - Weather Site (green digi) [w/ ov'lay]  
> what does "(green digi)" mean?

Its a WX symbol but green to show it is also a digi

> Symbol "\i" - Indoor short range digi [w/ overlay]  
> Does anyone have any suggestions about the symbol?

Yes, its a square box that a character can be overlayed on.

>  
> Symbol "\a" - ARRL ARES etc.  
> Is a particular symbol expected here?

A for ARES, R for RACES, etc

>  
> Symbol "/&" - HF Gateway  
> Folks in the Pacific NW US seem to be using diamond with  
OVERLAY. Yes, the diamond with overlay is the more general.

> A number of the symbols are very difficult to represent  
> graphically. These include "hail", "smoke", "freezing rain",  
> "haze", "earthquake", "snow shower" (as distinct from "snow"),  
> "rain shower" (as distinct from "rain"), "blowing dust/sand",  
> "fog", etc. Are there any thoughts about representing these?

See APRSdos. All of those are displayed using the standard NWS weather symbols. Don't think in terms of "icons" That is only driven by WinAPRS and Bill Gates. The symbols can be much more general than that.

bob

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---

## 7. [aprsspec] Re: More Symbol Questions

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 2 Mar 2000 15:06:33 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-68887-2000.03.02-14.20.40--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-68887-2000.03.02-14.20.40--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Thu, 2 Mar 2000, James Wagner wrote:

> Symbol "<" Advisory - what is this supposed to show?

A nNWS Advisory. It shows as one gale flag

> Symbol "\" Unknown or indeterminate position - if the  
> position is unknown or indeterminate, then there is  
> no position information which will allow it to be

Yes, but the field is defined, so you need something to put in it.

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---

## 8. [aprsspec] Re: unknown or indeterminate position "symbol"

From: James Wagner <[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)>  
Date: Fri, 3 Mar 2000 08:26:31 -0800 (PST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69039-2000.03.03-10.25.13--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69039-2000.03.03-10.25.13--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Yesterday, I posed several questions, one of which  
was:

> Symbol "\" Unknown or indeterminate position - if the  
> position is unknown or indeterminate, then there is  
> no position information which will allow it to be  
> positioned on a map  
>

Bob Bruninga responded:

Yes, but the field is defined, so you need something to put in it.

With all due respect, this is a program-specific response.  
Maybe HE needed to do that, but it does not mean that anyone  
else has to.

Thanks,

Jim Wagner,  
KA7EHK

---

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---

## 9. [aprsspec] Re: unknown or indeterminate postion "symbol"

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 3 Mar 2000 13:34:21 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-69050-2000.03.03-12.36.20--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 3 Mar 2000, James Wagner wrote:

> Yesterday, I posed several questions, one of which  
> was:  
>  
> > Symbol "\" Unknown or indeterminate position - if the  
> > position is unknown or indeterminate, then there is  
> > no position information which will allow it to be  
> > positioned on a map

> Bob Bruninga responded:  
> Yes, but the field is defined, so you need something to put in it.  
>  
> With all due respect, this is a program-specific response.  
> Maybe HE needed to do that, but it does not mean that anyone  
> else has to.

No it is not. There is a field in APRS for the SYMBOL. You CANNOT LEAVE IT OUT. If you have an unknown or indeterminate position, then you must still put SOMETHING in that SYMBOL field. The definition of a UNKNOWN or INDETERMINATE position symbol is provided for that case. There is nothing program specific about that.

Bob

---

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## 10. [aprsspec] Re: unknown or indeterminate postion "symbol"

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sat, 4 Mar 2000 00:12:38 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-69141-2000.03.04-01.11.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>On Fri, 3 Mar 2000, James Wagner wrote:

>  
>> Yesterday, I posed several questions, one of which  
>> was:  
>>

```

>> > Symbol "\" Unknown or indeterminate position - if the
>> > position is unknown or indeterminate, then there is
>> > no position information which will allow it to be
>> > positioned on a map
>
>> Bob Bruninga responded:
>> Yes, but the field is defined, so you need something to put in it.
>>
>> With all due respect, this is a program-specific response.
>> Maybe HE needed to do that, but it does not mean that anyone
>> else has to.
>
>No it is not. There is a field in APRS for the SYMBOL. You CANNOT LEAVE
>IT OUT. If you have an unknown or indeterminate position, then you must
>still put SOMETHING in that SYMBOL field. The definition of a UNKNOWN or
>INDETERMINATE position symbol is provided for that case. There is nothing
>program specific about that.
>
>Bob
>
>

```

This response shows how easy it is to confuse even familiar terminology when it is not explicit.

I thought that the reference to "field" was to a data display field in some APRS program. Bob clearly (after the clarification) meant a field in the APRS message.

Cheers,

Jim, KA7EHK

Jim Wagner  
Oregon Research Electronics

```

-----
wagnerj@proaxis.com      Tangent, Oregon 97389
KA7EHK@KC7KFE.OR.USA.NOAM near Corvallis OR, home of
ka7ehk@yahoo.com         Oregon State University
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A computer without Windows is like a cake without mustard. - anonymous

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## 11. [aprsspec] Thanks! [was: unknown or indeterminate position "symbol"]

```

From: "Ev Tupis (W2EV)" <propnet@greeceny.com>
Date: Sat, 04 Mar 2000 12:20:48 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-69170-2000.03.04-11.20.35--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

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> This response shows how easy it is to confuse even familiar
> terminology when it is not explicit. I thought that the
> reference to "field" was to a data display field in some
> APRS program. Bob clearly (after the clarification) meant a
> field in the APRS message.
> Cheers,
> Jim, KA7EHK

```

Hi Jim,  
Ain't it the truth! :o) I was a bit confused myself, but was happy to see the clarification.

I can't count the number of times that an eMail misunderstanding has resulted in an unnecessary firestorm (and even gotten sucked into a couple myself, quite inadvertently).

It reminds me of a "double translation" that was run on a text file. The sender couldn't speak Russian, and the intended receiver couldn't understand English. The sender sent the text through a language translator. Then, just to be safe, ran the translated text back through a Russian to English translator. The results were fascinating...including a phrase that started out as "out of sight, out

of mind" that ended up as "invisible, insane".

Keep smilin' folk! :o)

Warmly,  
Ev Tupis, W2EV

--  
PropNET: A digital wireless  
data network designed to  
plot band openings in near  
real-time. Intreagued?  
<http://go.to/propnet>

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## 12. [aprsspec] DX Spot

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sun, 5 Mar 2000 23:25:28 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69386-2000.03.06-00.24.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69386-2000.03.06-00.24.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello, all -

I posed this back on Mar 2, and I don't think anyone bit. It does seem to be fairly important because it appears to imply information that is not in the protocol. So, here goes, again:

Symbol "\d" DX Spot by Callsign - what is anticipated here?  
A DX symbol with the callsign next to it? Is the callsign in addition to the callsign of the station originating the symbol or does it substitute? How is the callsign specified? I don't see it in the protocol specs anywhere.

The most important issue here is: if it is to have a callsign label (other than the sender's call), how is it specified. Is this really an "object"???

In fact, page 8 carries the following statement which I honestly do not see:

"DX Cluster Reporting - APRS an ideal tool for the DX cluster user. Not only is it possible to see all DX spots on the map, but by operating in the monitor-only mode, the overall packet load on the DX cluster is reduced. This is a benefit to everyone on the channel."

Could someone please explain???

Many thanks,

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
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---

## 13. [aprsspec] Re: DX Spot

From: Steve Dimse <[sdimse@earthlink.net](mailto:sdimse@earthlink.net)>  
Date: Mon, 6 Mar 2000 07:56:30 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69422-2000.03.06-07.55.23--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69422-2000.03.06-07.55.23--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 3/6/00 12:25 AM Jim Wagner ([wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)) wrote:

>Symbol "\d" DX Spot by Callsign - what is anticipated here?  
> A DX symbol with the callsign next to it? Is the callsign  
> in addition to the callsign of the station originating

> the symbol or does it substitute? How is the callsign  
> specified? I don't see it in the protocol specs anywhere.  
>  
A symbol is just a symbol. Say you are a DX fiend and want to appear as a  
DX on the map, just enter that symbol. Many versions of APRS have the  
ability to receive and interpret DX spots on the map, but this protocol  
is defined by the DX cluster folk, not APRS folk...

Steve K4HG

---

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---

## 14. [aprsspec] Re: DX Spot

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 6 Mar 2000 09:33:28 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69427-2000.03.06-08.32.47--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69427-2000.03.06-08.32.47--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sun, 5 Mar 2000, Jim Wagner wrote:

> Symbol "\d" DX Spot by Callsign - what is anticipated here?  
> A DX symbol with the callsign next to it? Is the callsign  
> in addition to the callsign of the station originating  
> the symbol or does it substitute? How is the callsign  
> specified? I don't see it in the protocol specs anywhere.

"By callsign" in this case means that the position was derived from the  
international list of callsign locations, and was placed on the map  
according to that general position, not by any other means. That is why  
APRS includes a position ambiguity indicator all the way up to the nearest  
deg (60 miles) or 10 degrees (or 600 miles).

> "DX Cluster Reporting - APRS an ideal tool for the DX cluster user.  
> Not only is it possible to see all DX spots on the map, but by operating in  
> the monitor-only mode, the overall packet load on the DX cluster is  
> reduced. This is a benefit to everyone on the channel."  
>  
> Could someone please explain???

What dont you understand? Putting DX spots on the maps?  
Or how one APRS object packet instead of 50 copies and 50 acks is a  
benefit to the channel?

Bob

---

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---

## 15. [aprsspec] Re: DX Spot

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 6 Mar 2000 11:10:56 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69447-2000.03.06-10.10.06--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69447-2000.03.06-10.10.06--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 6 Mar 2000, Steve Dimse wrote:

> On 3/6/00 12:25 AM Jim Wagner ([wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)) wrote:  
>  
> >Symbol "\d" DX Spot by Callsign - what is anticipated here?

Steve said:

> A symbol is just a symbol. Say you are a DX fiend and want to appear as a  
> DX on the map, just enter that symbol. Many versions of APRS have the  
> ability to receive and interpret DX spots on the map, but this protocol  
> is defined by the DX cluster folk, not APRS folk...

For another 2 cents, the definition of that "symbol" is a "DX spot whose  
position was estimated based on its callsign prefix". Nothing more or  
less than that is implied. If you have DX information that was not gained  
by the use of the international list of callsign prefixes and the country



they belong to, then do not use this symbol. Use any one of the other 350 symbol possibilities as appropriate...

Bob

---

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---

## 16. [aprsspec] Re: DX Spot

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Tue, 7 Mar 2000 20:14:57 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69819-2000.03.07-21.14.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69819-2000.03.07-21.14.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Concerning the following - I did not understand HOW DX "spots" are to be placed on a map, hence how they could be of any use to DX cluster users.

Thanks for the explanation. That answered my question (somewhat). Do I understand properly that "DX Spot" is an object or item symbol?

The following question still remains. How is a country prefix transmitted? Is it THE OBJECT NAME??

Furthermore, if as Steve says, its NOT part of the APRS protocol, then why is it in the APRS symbol list?????

>> "DX Cluster Reporting - APRS an ideal tool for the DX cluster user.  
>> Not only is it possible to see all DX spots on the map, but by operating in  
>> the monitor-only mode, the overall packet load on the DX cluster is  
>> reduced. This is a benefit to everyone on the channel."  
>>  
>> Could someone please explain???  
>  
>What dont you understand? Putting DX spots on the maps?  
>Or how one APRS object packet instead of 50 copies and 50 acks is a  
>benefit to the channel?  
>  
>Bob  
>

Jim Wagner  
Oregon Research Electronics

-----  

|                                                              |                            |
|--------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a> | Tangent, Oregon 97389      |
| KA7EHK@KC7KFE.OR.USA.NOAM                                    | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>       | Oregon State University    |

  
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A computer without Windows is like a cake without mustard. - anonymous

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## 17. [aprsspec] Re: DX Spot

From: Steve Dimse <[sdimse@earthlink.net](mailto:sdimse@earthlink.net)>  
Date: Tue, 7 Mar 2000 21:59:48 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69828-2000.03.07-22.00.41--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69828-2000.03.07-22.00.41--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 3/7/00 9:14 PM Jim Wagner ([wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)) wrote:

>  
>Thanks for the explanation. That answered my question (somewhat). Do I  
>understand properly that "DX Spot" is an object or item symbol?  
>  
It is a symbol. It can represent anyone or anything, even a vehicle.  
  
>The following question still remains. How is a country prefix transmitted?  
>Is it THE OBJECT NAME??  
>  
In general, DX spots are transmitted on a DX cluster frequency, using

their own separate protocol. APRS programs that can interpret this protocol, and correctly place the spots on the map, often use the same icon to display them as the APRS DX icon, but there is absolutely no requirement that they do so. This is a user interface issue, not something covered in the APRS protocol.

If someone were to develop a DX Cluster to APRS gateway, the best way would probably be to turn the DX spots into APRS objects, and use the APRS DX symbol. However, no one has done this to the best of my knowledge. The programs that interpret DX spots do so using the native DX cluster protocol.

>Furthermore, if as Steve says, its NOT part of the APRS protocol, then why  
>is it in the APRS symbol list?????  
>

You still seem to be hung up on the concept of 'symbol'. A symbol is simply a bitmap that gets drawn on the screen of a user's computer at the request of another station. By convention, certain symbols have certain meanings, but they are not necessarily markers for particular protocol types.

So any station may choose to display on users' maps as a DX. If my name was Dimitri Xavier I might be particularly enamored of it. I could use it driving around in my truck if I wanted to. If I was a DX hound, I very well might like to use it for my home station as a "vanity" icon. I'm not a DX hound, I use a Macintosh computer, so often I use the Apple symbol, I live on an island so when I'm in the Keys I use the IOTA symbol. My Mac icon does not mean that I transmitted my position in a Macintosh protocol, only that I chose that symbol to represent my position. The IOTA symbol does not mean I transmitted an IOTA position format. Anyone can choose any symbol they want, though there are certain conventions, such as the star for digipeaters.

Steve K4HG

---

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## 18. [aprsspec] Re: DX Spot

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 7 Mar 2000 23:42:39 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-69843-2000.03.07-22.42.10--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 7 Mar 2000, Jim Wagner wrote:

> Thanks for the explanation. That answered my question (somewhat). Do I  
> understand properly that "DX Spot" is an object or item symbol?  
Yes

> The following question still remains. How is a country prefix transmitted?  
> Is it THE OBJECT NAME??

It is not transmitted. You use a local database built into all versions of APRS that support this function...

> Furthermore, if as Steve says, its NOT part of the APRS protocol, then why  
> is it in the APRS symbol list?????

The symbol IS in the protocol.  
DX spot decoding is in Mac/Win/APRSDos and others, and all kenwood products if it is not in the APRS spec, then it is a serious omission from the spec that should be fixed...

bob

---

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## 19. [aprsspec] Re: DX Spot

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Wed, 8 Mar 2000 09:29:24 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-69883-2000.03.08-08.28.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 7 Mar 2000, Steve Dimse wrote:

> >Do I understand properly that "DX Spot" is an object or item symbol?  
> >  
> It is a symbol. It can represent anyone or anything, even a vehicle.

We may be having a symantics problem here. I agree with Steve that we can plot any DX station on the map using any of the hundreds of APRS symbols, but the symbol identified in the SYMBOL.TXT file as a "DX SPot by callsign" should only be used to indicate a "DX-Spot-placed-on-the-map-in-that-location-using-the-process-of-callsign-prefix-database-lookup".

It should not be used except in accordance with its definition. Probably what we need then is a more general "DX" Icon also that can be used freely by anyone at anytime to indicate anything they want about "DX"...

I think this would solve this issue..

Bob

---

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## 20. [aprsspec] Re: DX Spot

From: Steve Dimse <sdimse@earthlink.net>  
Date: Wed, 8 Mar 2000 09:03:19 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-69894-2000.03.08-09.03.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 3/7/00 10:42 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

>> Furthermore, if as Steve says, its NOT part of the APRS protocol, then why  
>> is it in the APRS symbol list?????  
>

>The symbol IS in the protocol.  
>DX spot decoding is in Mac/WIn/APRSdos and others, and all kenwood  
>products if it is not in the APRS spec, then it is a serious omission from  
>the spec that should be fixed...  
>

I disagree. The DX cluster protocol was not developed by APRS authors, is not maintained by APRS authors, and does not belong in the APRS protocol document. Any APRS program or device is certainly free, and even encouraged, to support other protocols, but they do not belong in the APRS spec.

Steve K4HG

---

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---

## 21. [aprsspec] Re: DX Spot

From: James Wagner <ka7ehk@yahoo.com>  
Date: Wed, 8 Mar 2000 09:01:58 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-69908-2000.03.08-11.00.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ok, I understand Steve's assertion that "DX Spot" symbol can be used as a vanity symbol, just like MacAPRS, etc. I don't see any problem, there.

What does confuse me, and continues to, is the terminology in the (draft) spec symbol table:

"DX Spot with callsign"

The term "with callsign" is not used with any other symbol.

Thus, there must be something special here.

WHAT IS IT???

Thanks,  
Jim, KA7EHK

---

Do You Yahoo!?  
Talk to your friends online with Yahoo! Messenger.  
<http://im.yahoo.com>

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## 22. [aprsspec] Using Mic-E on HF: The MICENC program

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Wed, 8 Mar 2000 17:30:50 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69915-2000.03.08-11.31.07--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69915-2000.03.08-11.31.07--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I have just completed writing a new program that encodes Mic-E data for manual input to a TNC. This will be particularly useful in HF APRS, allowing the use of much shorter packets than normal.

Here is an extract from the documentation:

```
=====
MIC-E PACKET ENCODER
=====
```

Mic-E format is one of the formats that APRS uses to compress position, course, speed and other information into very short packets. This can be specially helpful in HF, satellite and meteor scatter communications, where received signals are often weak and deep in the noise. Clearly, the shorter the packet, the greater the chance that it will be received successfully.

In the extreme, Mic-E formatted packets can be as short as 27 bytes (plus flags). See the APRS Protocol Specification for full details of how this is achieved -- the current release of the specification is draft version 1.0.1g, dated 3 December 1999, available at <http://www.tapr.org/tapr/html/Faprswg.html>.

Traditionally, Mic-E formatted packets are generated by firmware, in units such as the Mic Encoder and PIC Encoder, and also in the Kenwood TH-D7 and TM-D700 radios. However, it is also possible to transmit Mic-E packets using just a plain TNC and radio, without any special Mic-E firmware. The trick is to encode all the required position and other information into suitable UNPROTO and BTEXT commands. Doing this by hand is a lengthy and error-prone job, so the MICENC program was written to automate the process.

```
=====
MICENC Features
=====
```

The MICENC program encodes a station's position and related information into Mic-E format, suitable for entering into a TNC as UNPROTO and BTEXT command strings.

The input data includes:

- \* Latitude (with position ambiguity if required)
- \* Longitude
- \* Message Code (for Standard, Custom and Emergency messages)
- \* Speed
- \* Course
- \* Symbol Code (with overlay where permitted)

The program outputs the:

- \* 6-character UNPROTO string (AX.25 Destination Address), containing the encoded latitude, message code, N/S indicator, W/E indicator and longitude offset.
- \* 9-character BTEXT (AX.25 Information field), containing the encoded longitude, speed, course and symbol code.

While most BTEXT strings will contain printable ASCII characters, some will not. MICENC highlights unprintable characters -- unfortunately most TNCs will not accept such characters as input. (Note: This is a TNC restriction. Mic-E compatible firmware will handle all valid Mic-E characters, whether printable ASCII or not).

MICENC also supports keyboard/display logging to disk, allowing the data to be examined at a later date.

MICENC is available from <http://www.netro.co.uk/aprs.html>

#### ----- Keyboard/Display Dialog -----

When entering data, the MICENC keyboard/display dialog looks something like this:

```
~~~~~
Latitude (e.g. 1234.56N) or 'Enter' to quit: 5157.96N
.....Longitude (e.g.12345.67W): 00029.39W
.....Message Type (M=Std, C=Cust, E=Emerg): M
.....Message Code (0-6): 2
.....Speed IN MPH (0-920): 0
.....Course (0-360): 4
.....Symbol Table (P=Primary, A=Alternate): A
.....Symbol Code (1-94): 13
~~~~~
```

```
MESSAGE = /M2/In Service SPEED = 0 knots
SYMBOL = House HF          OVERLAY = (none)
```

```
cmd: UNPROTO U1UWYV
cmd: BTEXT `v9C1 -/
      123456789
```

```
1=digit one  l=lower-case L  I=letter I  0=digit zero  O=letter O
~~~~~
```

The first section shows the input of the station's latitude, longitude, message (standard, custom or emergency), speed, course and symbol code (from the Primary or Alternate Symbol table). The program understands position ambiguity and symbol overlays.

The second section plays back the message, the speed in knots and the symbol/overlay in plain English, then displays the UNPROTO and BTEXT strings that correspond to the input data.

The digits 1-9 underneath the BTEXT string show the character positions -- this is a useful guide when typing the string into the TNC.

The last line of this section is simply for information, highlighting the differences between some of the characters that look very similar to each other.

In some cases the BTEXT string will contain non-printable ASCII characters. Unfortunately most TNCs will not accept these characters as BTEXT input. MICENC highlights them by displaying their character positions and hex codes. For example:

```
~~~~~
cmd: BTEXT ` (>l >/
      123456789
***** WARNING: Unprintable ASCII char(s)
Char #2 0x7F
Char #7 0x1C
~~~~~
```

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
+-----+
```

+-----+

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### 23. [aprsspec] Re: DX Spot

From: Bill Vodall <[Vodall@bigsky.com](mailto:Vodall@bigsky.com)>  
Date: Wed, 08 Mar 2000 10:56:09 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69952-2000.03.08-12.55.36--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69952-2000.03.08-12.55.36--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

>  
>The term "with callsign" is not used with any other symbol.  
>Thus, there must be something special here.  
>  
>WHAT IS IT???  
>  
>Thanks,  
>Jim, KA7EHK

Hi Jim,

Soon I'll have a better location here in Redmond. When I do, I'll be monitoring the DX Cluster folks frequency and develop some technology to cross post the objects to APRS. Since a DX spot for, for example, KA7EHK, doesn't have Lat/Long information, I'll have to get that from a callbook database - by callsign. These spots will use the "by callsign" object.

73,  
Bill - WA7NWP

---

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### 24. [aprsspec] Re: DX Spot

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Wed, 8 Mar 2000 17:39:57 -0600 (CST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-69991-2000.03.08-17.38.56--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-69991-2000.03.08-17.38.56--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> Date: Tue, 7 Mar 2000 20:14:57 -0700  
> From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
> Subject: [aprsspec] Re: DX Spot  
> [...]  
> Furthermore, if as Steve says, its NOT part of the APRS protocol, then why  
> is it in the APRS symbol list?????  
> [...]

This may simply be an artifact of the ongoing difference of opinion about whether the APRS spec is a protocol specification or a protocol specification plus some other stuff like user interface recommendations or specifications.

-tjs

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### 25. [aprsspec] Re: DX Spot

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 8 Mar 2000 22:53:27 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
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Rendered body type: text/plain

On Wed, 8 Mar 2000, Steve Dimse wrote:

> I disagree. The DX cluster protocol was not developed by APRS authors, is  
> not maintained by APRS authors, and does not belong in the APRS protocol  
> document. Any APRS program or device is certainly free, and even  
> encouraged, to support other protocols, but they do not belong in the

> APRS spec.

We are not talking about the DX cluster protocol which is a very complex protocol. We are talking about the fact that APRS adopted the single line format for a DX spot (and only that) as part of its protocol. Because of this, Kenwood and APRSdos and Mac/Win and maybe others then could all depend on the invariance of that definition to build to that common single line format.

To me, the recognition of the fact that APRS has adopted that single line format (APRS is a single-line-formatted-protocol) should be mentioned in the spec, just as we have delineated that APRS expects to parse a certain minimum subset of similar NMEA sentences.

Bob

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---

## 26. [aprsspec] Re: DX Spot

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Wed, 8 Mar 2000 23:06:58 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-70020-2000.03.08-22.05.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Maybe our messages crossed, but I explained that in great detail in 2 previous messages.

Further, I disagree with steve. It is not a general purpose DX icon. It is very specific in its use and means only the one thing. I DO AGREE, that this discussion has revealed the need for a more general purpose "DX" ICON that can be used more indiscriminantly.

Bob

On Wed, 8 Mar  
2000, James Wagner wrote:

> Ok, I understand Steve's assertion that "DX Spot" symbol  
> can be used as a vanity symbol, just like MacAPRS, etc.  
> I don't see any problem, there.  
>  
> What does confuse me, and continues to, is the terminology  
> in the (draft) spec symbol table:  
>  
> "DX Spot with callsign"  
>  
> The term "with callsign" is not used with any other symbol.  
> Thus, there must be something special here.  
>

> WHAT IS IT???

>  
> Thanks,  
> Jim, KA7EHK  
>  
>  
>  
>

> \_\_\_\_\_  
> Do You Yahoo!?  
> Talk to your friends online with Yahoo! Messenger.  
> <http://im.yahoo.com>  
>

> ---

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>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060

See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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---

## 27. [aprsspec] APRS WG Resignation

From: Steve Dimse <[sdimse@earthlink.net](mailto:sdimse@earthlink.net)>  
Date: Fri, 10 Mar 2000 13:48:15 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-70301-2000.03.10-13.47.51--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-70301-2000.03.10-13.47.51--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Just to let everyone know, I have resigned my position in the APRS Working Group. If anyone has any desire to take my position, or has someone they think should be invited to join, I would suggest you contact the remaining members with your ideas.

Steve K4HG

---

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---

## 28. [aprsspec] Re: APRS WG Resignation

From: Steve Dimse <[sdimse@earthlink.net](mailto:sdimse@earthlink.net)>  
Date: Fri, 10 Mar 2000 15:20:10 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-70317-2000.03.10-15.19.29--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-70317-2000.03.10-15.19.29--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I can see from the first 10 emails I've received I need to clarify this a little.

I am not leaving APRS, just the APRS Working Group. My database and XML projects will continue. The APRServe system will remain as it is.

Bob has accused me of being "anti-Bob" and impeding the progress of the APRSWG. I do not agree, I believe that my objections to protocol issues are based on my informed opinion, not personality. I do not feel Bob is "anti-Steve", I think he is arguing points based on his vision of APRS, and that we just differ greatly in our visions.

However, I recognize it is hard to be objective about such things. The fact is most discussions on the WG mailing list ended up being arguments between Bob and myself. We both have strong opinions, and neither of us is likely to change our minds. I do not want to be the person deciding the future of APRS, so perhaps it is best I stop trying to promulgate my vision. I do believe the APRSWG is important to the future of APRS, and that if you care about the future of APRS, you should contact members of the APRSWG with suggestions of who you would like to see included.

Long time APRSers know that I had specifically asked to be excluded from the APRSWG when it was formed. I was talked into joining by a number of other authors. I desperately wanted to see the WG formed, APRS opened up to other authors, and a protocol document produced. This has all happened, with the resulting protocol document being far better than I dreamed, thanks to the unexpected involvement of Ian Wade. His efforts produced an outstanding document, and I want to publicly thank him for this effort. Had he not signed on, and put out an enormous effort, the document might still not have been released. The whole APRS community owes Ian a huge debt.

Steve K4HG

---

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---

## 29. [aprsspec] X1J digis

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Sun, 12 Mar 2000 17:43:27 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-70642-2000.03.12-11.45.00--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-70642-2000.03.12-11.45.00--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain



I understand that X1J digis send a fixed string at the beginning of the data, so that the "!" APRS Data Type Identifier may be shifted from its usual first character position (by up to 39 characters).

Can someone please tell me the nature of the X1J fixed string. What data does it contain? What characters can it contain? Must not contain? Examples?

I'm working on an APRS decoder program, and I need to know how to unambiguously recognize (and ignore) X1J strings.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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---

### 30. [aprsspec] RE: X1J digis

From: "Rob Wittner" <rmw@rwa-inc.com>  
Date: Sun, 12 Mar 2000 18:59:49 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-70684-2000.03.12-17.56.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> I'm working on an APRS decoder program, and I need to know  
> how to unambiguously recognize (and ignore) X1J strings.

I'm not sure if this is the best way to do it, but in APRS/CE, I have the main parsing routine check the incoming data for all "well-defined" strings. The last thing it checks is for any '!' in up to the 40th position. For each one it finds, it calls the posit parsing routine with that portion of the string. If the posit parser fails to find a valid posit string, the whole string is treated as a status packet.

(Did that make sense?)

-Rob  
KZ5RW

---  
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---

### 31. [aprsspec] GOING DIGITAL!

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 14 Mar 2000 23:50:48 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71108-2000.03.14-22.50.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Authors,

You may have seen my uninvited musings about PACKET and the loss of the ability of many hams to even be able to hook up a TNC anymore. I rambled and sort of implied that anything digital is better than nothing.

What this leads me to here, is to wonder if we should not have specified in the APRS spec, what an APRS station does when it receives a CONNECT REQUEST?

APRSdos clears the screen and puts you straight into a dumb terminal window. Thus, you can respond to someone else who only connected to you conventionally. I know some of you object to putting "operating" stuff in the spec.... But would it make sense to be part of the spec to suggest that APRS software should facilitate backwards compatibility to dumb terminal connectivity?

I'd lean that way...

But conversly, I would shy from any further snoballing such as to encourage file-transfer. That is a NO-NO on an APRS channel. But I think we kinda agree that KEYBOARD activity is tollerable for the purpose of temporary communications...?

This is not a call for action... Just a thought about what your software does when someone connects to it...

Bob

---

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---

### 32. [aprsspec] Re: GOING DIGITAL

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Wed, 15 Mar 2000 00:26:07 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71151-2000.03.15-01.25.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob's comments are worth while. We really do need to consider a variety of non-APRS situations in our applications, and this is certainly one.

Jim, KA7EHK

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.UA.NOAM     near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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### 33. [aprsspec] Re: GOING DIGITAL!

From: Keith Sproul <ksproul@vger.rutgers.edu>  
Date: Wed, 15 Mar 2000 08:44:00 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-71213-2000.03.15-07.47.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

WinAPRS/MacAPRS recognizes the connect and sends a message saying that it doesn't accept connects, and then disconnects..

Keith Sproul

>Authors,

>

> You may have seen my uninvited musings about PACKET and the loss of the  
>ability of many hams to even be able to hook up a TNC anymore. I rambled  
>and sort of implied that anything digital is better than nothing.

>

>What this leads me to here, is to wonder if we should not have specified  
>in the APRS spec, what an APRS station does when it receives a CONNECT  
>REQUEST?

>

>APRSDos clears the screen and puts you straight into a dumb termianl  
>window. THus, you can respond to somone else who only connected to you  
>conventionally. I konw some of you object to putting "operating" stuff  
>in the spec.... But would it make sense to be part of the spec to suggest  
>that APRS software should facilitate backwards compatibility to dumb  
>terminal connectivity?

>

>I'd lean that way...

>  
>But conversly, I would shy from any further snoballing such as to  
>encourage file-transfer. That is a NO-NO on an APRS channel. But I think  
>we kinda agree that KEYBOARD activity is tollerable for the purpose of  
>temporary communications...?  
>  
>This is not a call for action... Just a thought about what your software  
>does when someone connects to it...  
>  
>Bob  
>  
>  
>  
>---  
>You are currently subscribed to aprsspec as: ksproul@vger.rutgers.edu  
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Keith Sproul                                732 445-3695 Office  
Student Housing Network Coordinator      732 445-2968 Fax  
mailto:ksproul@rci.rutgers.edu           732 821-4828 Home  
http://dorm.rutgers.edu/~ksproul/        WU2Z

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### 34. [aprsspec] MACH Speeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Mar 2000 14:50:05 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71920-2000.03.18-13.49.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve made some good suggestions about my Satellite Objects. I now only  
uplink them as objects when they are in view, and I kill them when they go  
below the horizon.

The one other suggestion by Steve was to modify the APRS Speed field to  
accomodate orbital speeds. The primary reason is so that the objects can  
be properly dead reckoned. This is important since my one minute objects  
will not all get through... AND if everyone dead reckons them properly,  
then I dont even need to sustain a 1 minute rate and can drop back to 2  
minutes!

One EASY way to do this is to simply define all speeds aboove 975 knots to  
be converted to MACH numbers by subtracting 974. Thus 976 is for example  
MACH 2 and 999 is MACH 25 which is the speed of orbiting satellites.  
The ONLY place to make this conversion is in the DEAD-RECKONING routine.  
Just let the CSE/SPD vector still be interpreted as 999.

Ill look up the exact conversion for MACH numbers in KTS and will advise  
on monday. Or we could make the cut off be at 900 and then we can express  
speeds in terms of quarter-MACH numbers to give higher precision... Which  
I doubt we will EVER need..

Bob

---  
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### 35. [aprsspec] Re: MACH Speeds

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 18 Mar 2000 15:12:02 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71925-2000.03.18-14.09.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Before you go spending alot of time on this, there already exists  
orbital prediction programs that can do a far better job then the system you  
are suggesting.

-Jeff

Bob Bruninga wrote:

> Steve made some good suggestions about my Satellite Objects. I now only  
> uplink them as objects when they are in view, and I kill them when they go  
> below the horizon.  
>  
> The one other suggestion by Steve was to modify the APRS Speed field to  
> accomodate orbital speeds. The primary reason is so that the objects can  
> be properly dead reckoned. This is important since my one minute objects  
> will not all get through... AND if everyone dead reckons them properly,  
> then I dont even need to sustain a 1 minute rate and can drop back to 2  
> minutes!  
>  
> One EASY way to do this is to simply define all speeds above 975 knots to  
> be converted to MACH numbers by subtracting 974. Thus 976 is for example  
> MACH 2 and 999 is MACH 25 which is the speed of orbiting satellites.  
> The ONLY place to make this conversion is in the DEAD-RECKONING routine.  
> Just let the CSE/SPD vector still be interpreted as 999.  
>  
> Ill look up the exact conversion for MACH numbers in KTS and will advise  
> on monday. Or we could make the cut off be at 900 and then we can express  
> speeds in terms of quarter-MACH numbers to give higher precision... Which  
> I doubt we will EVER need..  
>  
> Bob  
>  
> ---  
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### 36. [aprsspec] Re: MACH Speeds

From: "Steve Sampson" <ssampson@usa-site.net>  
Date: Sat, 18 Mar 2000 14:22:33 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71926-2000.03.18-14.21.16--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

No, I don't expect you will see more than a couple of hits on  
APRS, so orbital prediction is overkill.

----- Original Message -----

> Before you go spending alot of time on this, there already exists  
> orbital prediction programs that can do a far better job then the system you  
> are suggesting.  
>  
> -Jeff

---

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### 37. [aprsspec] Re: MACH Speeds

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 18 Mar 2000 15:30:53 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71927-2000.03.18-14.28.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I disagree. You need orbital prediction.

I was just suggesting their were already programs out there that could do  
this in a far better manner then what was being suggested.

-Jeff

Steve Sampson wrote:

> No, I don't expect you will see more than a couple of hits on  
> APRS, so orbital prediction is overkill.  
>  
> ----- Original Message -----

>  
> > Before you go spending alot of time on this, there already exists  
> > orbital prediction programs that can do a far better job then the system you  
> > are suggesting.  
> >  
> > -Jeff  
>  
> ---  
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### 38. [aprsspec] Re: MACH SPeeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Mar 2000 19:05:35 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71943-2000.03.18-18.05.21--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 18 Mar 2000, Jeff King wrote:

> Before you go spending alot of time on this, there already exists  
> orbital prediction programs that can do a far better job then the system you  
> are suggesting.

Yes, APRStk is one of them. It can predict position and velocity of a satellite to within about 1 degree in AZ/EL. But I would say that less than 1 percent of THD7 HT users or D700 users have a PC with them in their pocket or in their mobile.

My uplinking as objects of the 7 amateur satellites that are workable by a THD7 or D700 is a way to let those users see where the birds are without having to bother with a PC.

de WB4APR, Bob

---  
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### 39. [aprsspec] Re: MACH SPeeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Mar 2000 19:12:10 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71946-2000.03.18-18.11.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

What are you talking about "hits"?

What we are talking about is uplinked Satellite objects need to have a realistic speed in their posit packet so that they can be deadreckoned on off the map if for some reason a follow on packet never arrives. We anticipate using digipeated POSITS for most of the amateur satellties includeing the ISS. None of the existing satelites have GPS, so one of the purposes of APRStk is to digipeat 3rd party posits for these satellites so that ground users SEE a posit and vector on their maps.

We used this during all the APRS/MIR experiments in 1998 and 1999. AND we will use it for any other APRS satellite. And we are using it daily in our locally uplinked objects here to keep locals informed of passing birds...

bob

On Sat, 18 Mar 2000, Steve Sampson wrote:

> No, I don't expect you will see more than a couple of hits on  
> APRS, so orbital prediction is overkill.  
>  
> ----- Original Message -----  
>  
> > Before you go spending alot of time on this, there already exists  
> > orbital prediction programs that can do a far better job then the system you

> > are suggesting.  
> >  
> > -Jeff  
>  
>  
>  
> ---  
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>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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## 40. [aprsspec] THD7 Position ambiguity

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Mar 2000 19:31:08 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71951-2000.03.18-18.30.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Now that Position ambiguity is in the SPEC and is built into APRSdos, WinAPRS, APRS+SA and the D700, I think it is time to consider permitting it for THD7 users as well.

This is easy to do and has been built into APRSdos since the THD7 came out. Even if we do not codify it in the spec, other authors should consider implementing it.

Simply, any posit from a THD7 that ends in xxxx.00N/xxxxx.00W can be assumed to be ambiguous to the nearest minute. This assumption has a 99.99% chance of being the correct assumption.

The power of this, is that it lets handheld users of the THD7 keyboard in a POSIT at work and home and some favorite local places without having to carry a GPS unit everywhere he goes. And he will show up on the map as ambiguous to within a half mile of that location. Thus you can see about where he is for message purposes, but can also see at a glance that he is not using a GPS for precision...

de WB4APR, Bob

---

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---

## 41. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 18 Mar 2000 20:20:07 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71954-2000.03.18-19.19.42--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 18 Mar 2000, Bob Bruninga wrote:

> What are you talking about "hits"?  
> What we are talking about is uplinked Satellite objects need to have a

I didn't mean for that to sound argumentative.  
I was asking what kind of "hits" you were talking about, so I could understand the thread...

Bob

---

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---

## 42. [aprsspec] To substitute or not to substitute... DIGI is the question

From: "Tj Johnston" <[n4uyq@ar1.net](mailto:n4uyq@ar1.net)>  
Date: Sat, 18 Mar 2000 20:36:22 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-71956-2000.03.18-19.36.46--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-71956-2000.03.18-19.36.46--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

During a recent test of the APRSdigi software I encountered a situation I dont know what to do with. I send it to the list in hopes of finding an answer.

Here is the received packet, which I heard direct from KE4KLD....  
KE4KLD>APRSM,KF4HJW-10,WIDE3-3/0:=3719.31N/07719.00WMPHG5192/MacAPRS  
3.2.6 -VA-CH\_ENON -326-<04b>

APRSdigi sees that KF4HJW-10 does not have the \* to indicate that it digipeated it.. so it basically just ignores it.

Should I ignore it by APRS digi standards, or should I digipeat it?

Thoughts:

I could HOLD the packet, and If I dont hear it digipeated in say 30 seconds... I could then assume that

1) I cant hear KF4HJW-10

or

2) KF4HJW-10 never repeated it for some reason (not heard, garbled, etc...)

Should I digipeat it then??? and If so.. should I change the original path, or not, and if so... in what way?

=====  
Tj Johnston, N4UYQ ICQ#3134626  
Hopewell, VA - Prince George Co. ARES/RACES  
Eastern Virginia APRS Group (EVA) - Sec/Treas.  
EVA Homepage: <http://www.qsl.net/eva/>  
APRSdigi Homepage: [www.qsl.net/n4uyq/aprsdigi.htm](http://www.qsl.net/n4uyq/aprsdigi.htm)  
=====

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---

## 43. [aprsspec] Re: MACH Speeds

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sat, 18 Mar 2000 20:46:27 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-71957-2000.03.18-19.43.57--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-71957-2000.03.18-19.43.57--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob Bruninga wrote:

> On Sat, 18 Mar 2000, Jeff King wrote:  
>  
> > Before you go spending alot of time on this, there already exists  
> > orbital prediction programs that can do a far better job then the system you  
> > are suggesting.  
>  
> Yes, APRStk is one of them.

This is the first I have seen of this on APRSSPEC.. Is it using Keplerian elements like the other satellite tracking programs?

If not, there is some source code code on the [www.amsat.org](http://www.amsat.org) site that could help you here.

> But I would say that less  
> than 1 percent of THD7 HT users or D700 users have a PC with them in  
> their pocket or in their mobile.

I didn't realize these devices could do dead reckoning. Remember, you

were suggesting sending satellite velocity over the air, when in fact there is no need to do this if a device is smart enough to do some calculations on its own.

Do the Kenwood boxes have the ability to do dead reckoning?

> My uplinking as objects of the 7 amateur satellites that are  
> workable by a THD7 or D700 is a way to let those users see where the birds  
> are without having to bother with a PC.

Thats fine. What does this have to do with "Mach numbers" and once again kludging a spec that has yet to be released?

-Jeff

>

---

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#### 44. [aprsspec] Re: MACH SPEEDS

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Sat, 18 Mar 2000 19:47:25 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-71958-2000.03.18-19.46.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

When I first read the message, I imagined you were talking about a satellite passing through your listening view area. You might receive one packet (hit) closing in, and one packet opening out.

----- Original Message -----

> What are you talking about "hits"?

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#### 45. [aprsspec] Re: MACH SPEEDS

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 18 Mar 2000 21:09:23 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-71961-2000.03.18-20.08.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 18 Mar 2000, Jeff King wrote:

> > Before you go spending alot of time on this, there already exists  
> > orbital prediction programs that can do a far better job then the system you  
> > are suggesting.  
> >  
> > Yes, APRStk is one of them.  
>  
> This is the first I have seen of this on APRSSPEC.. Is it using Keplerian elements  
> like the other satellite tracking programs?

Yes. Its been out for a few months and talked about quite a bit on the SIGS. It not only tracks the satelites, but also QSY's the kenwoods for automatic operation with these 7 satelites and tunes for doppler..

> > But I would say that less than 1 percent of THD7 HT users or D700  
> > users have a PC with them in their pocket or in their mobile.  
>  
> I didn't realize these devices could do dead reakoning. Remember, you  
> were suggesting sending satellite velocity over the air, when in fact  
> there is no need to do this if a device is smart enough to do some  
> calculations on its own.

Sorry, they cannot. But these objects show on everyoe elses APRS maps, and if you dont DR them, then they become stagnant eroneous plots.

> Thats fine. What does this have to do with "Mach numbers" and once again



> kludging a spec that has yet to be released?

We need a means in APRS to specify velocities greater than 999 knots. In this case, 17,500 MPH to apply to amateur satellites for example. Allowing speed values in excess of 975 be translated into Mach numbers was just an idea to allow for specifying the full range of speeds that might apply to APRS objects that would be backwards compatible to all existing software...

Bob

---

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---

## 46. [aprsspec] Re: MACH Speeds

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sat, 18 Mar 2000 21:13:21 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-71962-2000.03.18-20.10.57--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-71962-2000.03.18-20.10.57--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob Bruninga wrote:

> The one other suggestion by Steve was to modify the APRS Speed field to  
> accomodate orbital speeds. The primary reason is so that the objects can  
> be properly dead reckoned. This is important since my one minute objects  
> will not all get through... And if everyone dead reckons them properly,  
> then I dont even need to sustain a 1 minute rate and can drop back to 2  
> minutes!

OK, I looked into APRStk, and indeed it uses Keplerian elements. So it is able to transmit (and see) a exact satellite position report and has no need for dead reckoning.

Now, there are plenty of freeware satellite tracking programs, so anyone with a computer (and who doesn't run APRStk) could use those and get much better results then any kind of attempt at 3 dimensional dead reckoning.

So anyone running a computer, can run a satellite tracking program, and really has no need to get posits over the air.

So that leaves stupid trackers, like the Kenwood products. Now I see no reference if these do "dead reckoning" on the Kenwood Web page. Even if they did, I'm sure this 2 dimensional version of dead reckoning, which doesn't recognize anything over 999 mph, and even if it did, would do a poor job with anything that wasn't on the surface of the earth.

So why again are you suggesting the APRS protocol be modified?

-Jeff

---

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## 47. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 18 Mar 2000 21:12:50 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-71963-2000.03.18-20.12.39--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-71963-2000.03.18-20.12.39--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sat, 18 Mar 2000, Steve Sampson wrote:

> When I first read the message, I imagined you were talking about  
> a satellite passing through your listening view area. You might  
> receive one packet (hit) closing in, and one packet opening out.

Oh, I see. No, I guess since I have been running APRStk, I keep my map on the 2048 mile range so I can see all satellites above my horizon, and anyone's APRS packets that may be relayed by the satellites. I still zoom in locally if anything happens there too...

Bob

---

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#### 48. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 18 Mar 2000 21:22:02 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-71965-2000.03.18-20.21.32--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-71965-2000.03.18-20.21.32--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sat, 18 Mar 2000, Jeff King wrote:

> So anyone running a computer, can run a satellite tracking program, and  
> really has no need to get posits over the air.

Yep.

> So that leaves stupid trackers, like the Kenwood products. Now I see no  
> reference if these do "dead reckoning" on the Kenwood Web page. Even if  
> they did, I'm sure this 2 dimensional version of dead reckoning, which doesn't  
> recognize anything over 999 mph, and even if it did, would do a poor job  
> with anything that wasn't on the surface of the earth.

>

> So why again are you suggesting the APRS protocol be modified?

Because it does not allow for Speeds of Orbiting APRS stations of which  
there are and will be many. We allowed for their altitude in the PHG  
equations, but overlooked their speeds.

Most MOBILE, PORTABLE and HANDHELD units don't have PC's with them. It is  
useful to them to post OBJECTS showing them the position of satellites  
that they can work. Such objects are moving stations, and as such need a  
realistic CSE/SPD vector.

Bob

---

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#### 49. [aprsspec] Re: MACH Speeds

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sat, 18 Mar 2000 21:23:08 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-71966-2000.03.18-20.22.03--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-71966-2000.03.18-20.22.03--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

OK, I just sent something else out.

Bob Bruninga wrote:

> > But I would say that less than 1 percent of THD7 HT users or D700  
> > users have a PC with them in their pocket or in their mobile.  
> >  
> > I didn't realize these devices could do dead reckoning. Remember, you  
> > were suggesting sending satellite velocity over the air, when in fact  
> > there is no need to do this if a device is smart enough to do some  
> > calculations on its own.  
>  
> Sorry, they cannot.

Well, I don't understand why you want to modify the protocol then?  
It won't benefit the stupid trackers at all.

> But these objects show on everyone else's APRS maps,  
> and if you don't DR them, then they become stagnant erroneous plots.

Maps??? As in they are running a computer? They would be a lot better

off, the radio channel would be alot better off, if they just ran a freeware tracking program on their computer.

> > Thats fine. What does this have to do with "Mach numbers" and once again  
> > kludging a spec that has yet to be released?  
>  
> We need a means in APRS to specify velocities greater than 999 knots.

I've yet to see a compelling reason why this is needed. Let me remind you version 1.0 of the spec has yet to be released. Maybe for APRS version 2.0? I've just not seen that many hams in hypersonic vehicles (well, at least recently).

> In  
> this case, 17,500 MPH to apply to amateur satellites for example.  
> Allowing speed values in excess of 975 be translated into Mach numbers  
> was just an idea to allow for specifying the full range of speeds that  
> might apply to APRS objects that would be backwards compatible to all  
> existing software...

Your really only interested in one speed then? Why not just have a switch that triggers on the object type then? I think there is a ICON for a satellite if I'm not mistaken.

I understand what you are trying to do, I just question the need to do it. What you are suggesting is to both modify the protocol and to transmit speeds over the air. Since the stupid trackers can't do DR, that only leaves the computer operators. And they would be better served running a tracking program.

Just my thoughts.

Carry on.

-Jeff

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## 50. [aprsspec] Re: MACH SPEEDS

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 18 Mar 2000 21:33:16 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-71967-2000.03.18-20.30.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

>  
> > So why again are you suggesting the APRS protocol be modified?  
>  
> Because it does not allow for Speeds of Orbiting APRS stations of which  
> there are and will be many. We allowed for their altitude in the PHG  
> equations, but overlooked their speeds.

To a certain degree (and I would need to hit the books to verify this), if a object is in a stable circular orbit, you can calculate the speed if you know the altitude.

Most certainly you will know the speed within the granularity of the Mach scale you suggest.

> Most MOBILE, PORTABLE adn HANDHELD units dont have PC's with them. It is  
> useful to them to post OBJECTS showing them the position of satellites  
> that they can work.

Yes, we don't disagree the stupid trackers (Kenwood) would benefit from the positions being sent of these objects.

> SUCh objects are moving stations, and as such need a  
> realistic CSE/SPD vector.

Why? In your last message you said the Kenwood couldn't do dead reckoning, so I still don't understand why you want to modify APRS version 1.0 to support something that is of little or no value to these stupid trackers.

I think what might be of more value is to occasionally send out the keps, be it on APRSERVE or every so often on the local lan.

-Jeff

---

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## 51. [aprsspec] Re: To substitute or not to substitute... DIGI is the question

From: "Ev Tupis (W2EV)" <propnet@greeceny.com>  
Date: Sun, 19 Mar 2000 05:18:17 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72019-2000.03.19-04.19.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

With editing, Tj Johnston wrote:

> Here is the received packet, which I heard direct from KE4KLD...  
> KE4KLD>APRSM,KF4HJW-10,WIDE3-3/0:=3719.31N/07719.00WMPHG5192/MacAPRS  
> 3.2.6 -VA-CH\_ENON -326-<04b>  
>  
> APRSdigi sees that KF4HJW-10 does not have the \* to indicate that it  
> digipeated it.. so it basically just ignores it.  
>  
> Should I ignore it by APRS digi standards, or should I digipeat it?

Hi Tj,

Assuming that you are hearing this packet direct (which is probable, since it looks like the two of you are less than 6km distant from each other), then the originating station desires to have KF4HJW-10 as the only station through which its packet is passed on it's way to the greater APRS network. Your system should ignore the packet.

It appears as though KE4KLD has already assessed the local network and determined that this is the way they want to use it.

If, though, they had launched the packet as: KE4KLD>APRSM,WIDE,WIDE3-3 .  
. . then your system ought to call-substitute for the WIDE and digipeat it.

Good question, by the way.

Ev, W2EV

--

PropNET: an automated network, designed to  
study propagation anomalies.  
<http://www.RochesterNY.org/PropNET>

---

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## 52. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 19 Mar 2000 09:05:11 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72036-2000.03.19-08.04.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 18 Mar 2000, Jeff King wrote:

> I think what might be of more value is to occasionally send out the keps, be  
> it on APRSERVE or every so often on the local lan.

APRStk can do this. It can format the keps into the NASA one-line element format and it can receive them too. Thus only one station in the world will need to update his elements. Everyone else will be updated automatically. I will probably send one such packet every hour or less.

Igates will need to pass this from APRServe back to RF.  
bob

---

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---

### 53. [aprsspec] Re: MACH Speeds

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sun, 19 Mar 2000 13:04:11 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-72084-2000.03.19-12.01.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

> On Sat, 18 Mar 2000, Jeff King wrote:  
>  
> > I think what might be of more value is to occasionally send out the keps, be  
> > it on APRSERVE or every so often on the local lan.  
>  
> APRStk can do this.

OK. Not to sound like a broken record then, why would any station have to "dead reckon" the position of the satellite then (requiring a modification of the protocol APRS V1.0)? IMHO, it just seems like all the tools are at your fingertips already to do a far better job then just DR using course/speed.

(Note, any "Satellite orbital predication" program using the keps is in essence doing dead reckoning, the dead reckoning being discussed here is base solely on course and speed)

I understand the dumb trackers would need a posit sent out, but they can't do DR, hence the suggested modification to the protocol would not benefit them at all.

BTW, both basic and C source code for orbital prediction is available on the AMSAT web site. This covers all the authors except SA4, if they want to add this to their program. Otherwise, there are any number of freeware sat tracking programs available that end users can run.

Bob, I'm not in any way saying what you want to do is bad..... its great. But your suggesting a modification to the protocol for a purpose it doesn't appear well suited for. Further, and most importantly, there already exists, -today-, better methods to get the same results you are looking for, without any need to modify the existing protocol.

As not a single person from the APRS-WG (other then you) has commented here, maybe I could ask them to do so? I assume this already went through their process..... and apparently was approved? Maybe if one of them could clarify the need for the change, I might be able to understand why it is not redundant.

BTW, what did you think of my idea to use the satellite ICON to represent orbital speed? That wouldn't require a modification to the protocol if you still wanted to do D/R.

Thanks

Jeff

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---

### 54. [aprsspec] Re: MACH Speeds

From: Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Sun, 19 Mar 2000 14:15:14 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-72091-2000.03.19-13.14.42--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 3/19/00 1:04 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:

>As not a single person from the APRS-WG (other then you) has commented  
>here, maybe I could ask them to do so? I assume this already went through  
>their process..... and apparently was approved? Maybe if one of them  
>could clarify the need for the change, I might be able to understand why it  
>is not redundant.

>

It was the discussion of the satellite issue that led to my leaving the APRSWG. People were complaining to me that these reports generated long vectors that were cluttering javAPRS maps. I suggested that he return to sending 0/0 as course/speed, rather than transmit erroneous data.

I have no idea if this new proposal was discussed by the APRSWG, as I am no longer on their mail list. Bob's recent post here is the first I have heard of using mach numbers. However, knowing how the APRSWG works, I very much doubt it has been approved, or even discussed. Perhaps Bob came here to discuss it because no one on the APRSWG list is willing to spar with him anymore ;-)

I am sick of this subject, but I will post my position for the record. I am opposed to Bob sending a speed of 999 MPH with the sat positions, as this is incorrect...no data is better than bad data. Even if he solves the speed inaccuracy issue with this latest proposal (and this indeed is something that must be done on the APRSWG list, not here) there is still the fact that the course of a satellite is constantly changing in relationship to the earth's coordinate system. Even the best dead-reckoning software will err because of this. Due to the speed of a satellite, even the relatively short delays of an AX-25 network can result in errors of hundreds of miles. Given all these problems, I agree totally with Jeff that there are far better software tools for this if you have a computer available.

Bob wants to use these position reports to make people aware of the passes of the sats, so that handheld and mobile users can use the the sats without needing a tracking program. My position is that it would be far easier for these people to make use of a message giving the times and azimuth of AOS, max el, and LOS, and the max el, transmitted shortly before a pass begins. It is these numbers, not the position of a satellite, that you actually need to track a sat with an Arrow antenna, or use a D700 to transmit. This is what APRStk ought to transmit, not bogus position reports...

Feel free to ignore these musings because, as Bob is certain to point out, I am violently "anti-Bob", and fervently believe his last good idea was the concept of APRS ;-)

Steve K4HG

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## 55. [aprsspec] Re: MACH SPeeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 19 Mar 2000 14:19:58 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72092-2000.03.19-13.19.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Jeff King wrote:

> OK. Not to sound like a broken record then, why would  
> any station have to "dead reckon" the position of the satellite then  
> (requiring a modification of the protocol APRS V1.0)? IMHO, it just  
> seems like all the tools are at your fingertips already to do a far better  
> job then just DR using course/speed.  
>  
> I understand the dumb trackers would need a posit sent out, but they can't  
> do DR, hence the suggested modification to the protocol would not  
> benefit them at all.

Jeff, Please read this paragraph. I have said this three times. I hope you can understand it this time:

Here is why. To send SAT objects for the Kenwoods to see, those objects will ALSO appear on EVERYONE ELSE'S MAP. If it doesn't have a SPEED included in the packet, then that position is a LIE one second after it is transmitted. It is a moving object. A MOVING object is MOVING and will NOT be where it was posted at any time in the future. So to provide the current location of an object that is MOVING, it must also have a COURSE AND A SPEED.

And as Steve pointed out, if the SPEED does not match reality, then deadreckoning does not work and will not then clear these objects off

everyones maps.

I dont see you on APRS. What version of APRS do you use routinely? Is it not DRing these objects?

> But your suggesting a modification to the protocol for a purpose it doesn't  
> appear well suited for. Further, and most importantly, there already exists,  
> -today-, better methods to get the same results you are looking for,  
> without any need to modify the existing protocol.

- 1) Forget the purpose. There are APRS stations moving at MACH25. Are we going to accomodate any speed above 999 or not?
- 2) Tell us your better way to get this data to a Handheld THD7 and mobile D700.

> BTW, what did you think of my idea to use the satellite ICON to represent  
> orbital speed? That wouldn't require a modification to the protocol if you  
> still wanted to do D/R.

Bad idea.

A kludge, allowing only one speed value, and also then requiring a modification to the spec. Also we have a Satelllite on the top of a water tower here for local testing. It is NOT moving. With your idea, then I could not use the PACSAT ICON. Lots of problems with it.

Bob

---

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---

## 56. [aprsspec] Re: MACH Speeds

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 19 Mar 2000 14:59:43 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72100-2000.03.19-13.57.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

>  
> > I understand the dumb trackers would need a posit sent out, but they can't  
> > do DR, hence the suggested modification to the protocol would not  
> > benefit them at all.  
>  
> Jeff, Please read this paragraph. I have said this three times. I hope  
> you can understand it this time.

The problem is, I do understand. Hence my concern.

All I can suggest to you, is to codify your idea and submit it to the APRS-WG. It might very well be a good addition to APRS Version 2.0. I will differ to them for this decision.

> > BTW, what did you think of my idea to use the satellite ICON to represent  
> > orbital speed? That wouldn't require a modification to the protocol if you  
> > still wanted to do D/R.  
>  
> Bad idea.  
> A kludge, allowing only one speed value, and also then requiring a  
> modification to the spec.

Kludge? That's a interesting statement.... First of all, all you are interested in is ONE speed value, that is, the speed of a object that is in a stable orbit around the earth.

Second of all, its not a modification to the spec, its a switch in the display program. This would in no-way change any of the over the air data. The sats velocity would be shown as "0" but then the user could set there display program to detect that the ICON was a SAT, implying the object was at orbital speed, and allowing the position to be determined from using the KEPS you had sent out earlier.

> Also we have a Satelllite on the top of a water  
> tower here for local testing. It is NOT moving. With your idea, then I  
> could not use the PACSAT ICON. Lots of problems with it.

>From the Dictionary: Satellite 1. A relatively small body orbiting a planet.

If you chose to use a improper ICON, sure, you'll have a problem. There are lots of problems with people using hurricane objects for the position of their house..... that's why I guess most don't do it.

The problem with a spec is people expect you to actually follow it. If you want to change the spec, its my understanding you're supposed to submit it to the APRS-WG, and they will consider it for APRS version 2.0. As you also sit on the APRS-WG, it would be my expectation that you would be reclused from any internal discussions of the APRS-WG regarding the suggested addition you made.

Good luck

Jeff

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## 57. [aprsspec] Re: MACH Speeds

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sun, 19 Mar 2000 15:50:18 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-72110-2000.03.19-14.48.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

>  
> 2) Tell us your better way to get this data to a Handheld THD7 and mobile  
> D700.

I like Steve's idea as it more directly addresses the specific requirements of the user.

Steve Dimse wrote:

> My position is that it would be  
> far easier for these people to make use of a message giving the times and  
> azimuth of AOS, max el, and LOS, and the max el, tranmitted shortly  
> before a pass begins. It is these numbers, not the position of a  
> satellite, that you actually need to track a sat with an Arrow antenna,  
> or use a D700 to transmit.

>

>

> > BTW, what did you think of my idea to use the satellite ICON to represent  
> > orbital speed? That wouldn't require a modification to the protocol if you  
> > still wanted to do D/R.

>

> Bad idea.  
> A kludge, allowing only one speed value, and also then requiring a  
> modification to the spec. Also we have a Satelllite on the top of a water  
> tower here for local testing, It is NOT moving. With your idea, then I  
> could not use the PACSAT ICON. Lots of problems with it.

>

> Bob

>

> ---

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## 58. [aprsspec] Re: MACH Speeds

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 19 Mar 2000 16:10:39 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72117-2000.03.19-15.08.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

> On Sun, 19 Mar 2000, Jeff King wrote:

> > But your suggesting a modification to the protocol for a purpose it doesn't  
> > appear well suited for. Further, and most importantly, there already exists,  
> > -today-, better methods to get the same results you are looking for,  
> > without any need to modify the existing protocol.  
>  
> 1) Forget the purpose. There are APRS stations moving at MACH25.

Forget the purpose of APRS? Hold on a minute here, I seem to recall everytime I pointed out some flaws in APRS, I was politely told that the concerns I had (primarily reliability) were outside the scope of the purpose of APRS.

> Are we going to accomodate any speed above 999 or not?

There is no compelling reason at this time to. There are no commonly available vehicles (save military) that can actively change speed/course vectors as a normal part of their operation in excess of 999 mph. The only civilian vehicle that could do this (The Bede BD-10), never made it through FAA certification.

As I have already stated, very excellent satellite tracking programs exist that can do a far better job then what you are suggesting, without requiring modifications to the protocol or redundant data to be sent over the air. Further, now that I understand what you are trying to do, I believe the needs of the "dumb tracker" users can better be addressed by Steve Dimse's suggestion.

-Jeff

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## 59. [aprsspec] Re: THD7 Position ambiguity

From: Carl <carl\_mail@dr.com>  
Date: Sun, 19 Mar 2000 22:04:56 GMT  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-72141-2000.03.19-16.07.05--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> The power of this, is that it lets handheld users of the THD7 keyboard in  
> a POSIT at work and home and some favorite local places without having to  
> carry a GPS unit everywhere he goes. And he will show up on the map as  
> ambiguous to within a half mile of that location. Thus you can see about  
> where he is for message purposes, but can also see at a glance that he is  
> not using a GPS for precision...

Nice. But the distance calculations ought be based upon the .00 setting  
else similar paths will change distance each day - and the variation ought  
be .51 -.49 rather than .00-.99 IYSWIM

Carl gw0tqm  
gw0tqm@iname.com

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---

## 60. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 19 Mar 2000 18:10:05 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-72169-2000.03.19-17.10.08--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Steve Dimse wrote:

> It was the discussion of the satellite issue that led to my leaving the  
> APRSWG. People were complaining to me that these reports generated long  
> vectors that were cluttering javAPRS maps. I suggested that he return to  
> sending 0/0 as course/speed, rather than transmit erroneous data.

The solution to the long vectors is a local display problem. APRSdos solved it with a Log length vector. And, No, you insisted I either send no speed, OR the "correct" speed. And no (0) speed is not an option for a moving object.

> I have no idea if this new proposal was discussed by the APRSWG, as I am  
> no longer on their mail list. Bob's recent post here is the first I have  
> heard of using mach numbers. However, knowing how the APRSWG works, I  
> very much doubt it has been approved, or even discussed. Perhaps Bob came  
> here to discuss it because no one on the APRSWG list is willing to spar  
> with him anymore ;-)

Its not a matter of sparing. Its a matter of discussing technical issues encountered in APRS. I posted it here because I thought that this spec list was for proposing possible modifications to the spec. That's what I thought this list was for.

> I am sick of this subject, but I will post my position for the record. I  
> am opposed to Bob sending a speed of 999 MPH with the sat positions, as  
> this is incorrect...no data is better than bad data. Even if he solves  
> the speed inaccuracy issue with this latest proposal (and this indeed is  
> something that must be done on the APRSWG list, not here).

I dont think the APRSwg is supposed to deliberate without some input from the users and others interested in contributing to modifications to the Spec.

> there is still  
> the fact that the course of a satellite is constantly changing in  
> relationship to the earth's coordinate system. Even the best  
> dead-reckoning software will err because of this.

No. APRSst is determining the CSE vector by its changing position relative to the GROUND, NOT by its true orbital vector. Thus it is quite valid over the few minutes of the USA and mid latitudes which comprise most of the population density.

> Due to the speed of a satellite, even the relatively short delays of an  
> AX-25 network can result in errors of hundreds of miles.

First, the error is only a few miles NOT hundreds. And Second, that is why moving objects are transmitted with TIME,COURSE and SPEED. It donest matter when it gets to you, since APRS Dead Reckoning will then be able to place it correctly.

> Given all these problems, I agree totally with Jeff that there are far  
> better software tools for this if you have a computer available.

> Bob wants to use these position reports to make people aware of the  
> passes of the sats, so that handheld and mobile users can use the the  
> sats without needing a tracking program. My position is that it would be  
> far easier for these people to make use of a message giving the times and  
> azimuth of AOS, max el, and LOS, and the max el, tranmitted shortly  
> before a pass begins. It is these numbers, not the position of a  
> satellite, that you actually need to track a sat with an Arrow antenna,  
> or use a D700 to transmit. This is what APRStk ought to transmit, not  
> bogus position reports...

Wrong. AZ/EL angles only apply for one observer at one place on earth. The AZ/EL to the satellite is different for all observers. The only accurate info that is universal is the satellites POSITION, TIME and CSE/SPD vector. From this, all else can be determined by ALL observers no matter where they are.

> Feel free to ignore these musings because, as Bob is certain to point  
> out, I am violently "anti-Bob", and fervently believe his last good idea  
> was the concept of APRS ;-)  
>  
> Steve K4HG

The problem remains. APRS does not address speeds in excess of 999 Kts, yet we have 4 satellites using APRS, and we have a commitment for the International Space Station to use APRS and MIR/Shuttle will use APRS on occasion. Thus APRS should address how it is going to handle these moving stations at orbital speeds.

I am open to any other suggestions as to how to incorporate these speeds into APRS that are backwards compatible to the existing users. One other thought was to let 999 = 17,500 MPH and let 998 = The speed of the Concord. These are two notable exceptions. But rather than doing it that way, I proposed the MACH number approach above 975 Kts to allow for greater flexibility... If there are other ideas, other than ignoring the problem, I am certainly open to discussing them..

de WB4APR, Bob

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## 61. [aprsspec] Re: MACH Speeds

From: Steve Dimse <sdimse@netrox.net>  
Date: Sun, 19 Mar 2000 18:41:38 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72173-2000.03.19-17.41.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 3/19/00 6:10 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

>First, the error is only a few miles NOT hundreds. And Second, that is  
>why moving objects are transmitted with TIME,COURSE and SPEED. It doesn't  
>matter when it gets to you, since APRS Dead Reckoning will then be able to  
>place it correctly.

>

Make up your mind...you told Jeff these reports are to help those without access to real tracking programs on computers. Now you are saying you need to use dead reckoning. Which is it?

>> Bob wants to use these position reports to make people aware of the  
>> passes of the sats, so that handheld and mobile users can use the the  
>> sats without needing a tracking program. My position is that it would be  
>> far easier for these people to make use of a message giving the times and  
>> azimuth of AOS, max el, and LOS, and the max el, transmitted shortly  
>> before a pass begins. It is these numbers, not the position of a  
>> satellite, that you actually need to track a sat with an Arrow antenna,  
>> or use a D700 to transmit. This is what APRStk ought to transmit, not  
>> bogus position reports...

>

>Wrong. AZ/EL angles only apply for one observer at one place on earth.  
>The AZ/EL to the satellite is different for all observers. The only

You told me these are for transmission in local areas, not for worldwide consumption. Have you changed your mind on this?

>accurate info that is universal is the satellites POSITION, TIME and  
>CSE/SPD vector. From this, all else can be determined by ALL observers no  
>matter where they are.

>

Well, Bob, you clearly are much better at trig-in-the-head than I.

If you tell me I'm at 24 42.54N 81 24.63W, and the sat is at 28 12.83N 83 22.63W, I sure can't figure out the elevation in my head. In fact, neither can a computer, since you also need to figure in the altitudes. I can guess it would be roughly NW, and the bandwidth of an Arrow is large enough I should be able to find the sat, but I still have no idea how "good" a pass this will be (i.e. what will be the max elevation).

On the other hand, if I know a pass starts at 4:30PM at 263 degrees, reaches max elevation of 53 degrees elevation, 24 azimuth at 4:36 and ends at 4:45 at 58 degrees, I have a great idea of where the sat will travel. Far more useful to my "non-engineering mind" as you call it!

How about the users? Which would you rather see? Or are all of you tired of this little glimpse at what the APRSWG was like? Promise, no more from

me on this subject, I've moved on...

Steve K4HG

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## 62. [aprsspec] Re: MACH Speeds

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sun, 19 Mar 2000 19:10:41 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-72188-2000.03.19-18.08.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-72188-2000.03.19-18.08.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob Bruninga wrote:

> On Sun, 19 Mar 2000, Steve Dimse wrote:  
>  
> > It was the discussion of the satellite issue that led to my leaving the  
> > APRSWG. People were complaining to me that these reports generated long  
> > vectors that were cluttering javAPRS maps. I suggested that he return to  
> > sending 0/0 as course/speed, rather than transmit erroneous data.  
>  
> The solution to the long vectors is a local display problem. APRSdos  
> solved it with a Log length vector. And, No, you insisted I either send  
> no speed, OR the "correct" speed. And no (0) speed is not an option for a  
> moving object.

A "local display problem" that would require changing the source code in EVERY SINGLE APRS display program out there with the changes you propose. Its great you have gone ahead and already done this, yet we now have a APRS-WG in place, and like it or not, the APRS-WG is supposed to keep some consistence in the user code space.

And speaking of "local display problems", what again was your concern with using the satellite ICON to signify an object was a small body orbiting the earth? \*IF\* a author wanted to change his code to incorporate this, he/she could, but if they didn't, it would not adversely effect the user experience and/or generate bogus data.

> I dont think the APRSwg is supposed to deliberate without some input from  
> the users and others interested in contributing to modifications to the  
> Spec.

Two users have already made comments on here regarding your idea.

> > there is still  
> > the fact that the course of a satellite is constantly changing in  
> > relationship to the earth's coordinate system. Even the best  
> > dead-reckoning software will err because of this.  
>  
> No. APRSst is determining the CSE vector by its changing position  
> relative to the GROUND, NOT by its true orbital vector. Thus it is quite  
> valid over the few minutes of the USA and mid latitudes which comprise  
> most of the population density.

What about all the other APRS display apps out there? Also, any part of the spec should work (IMHO) over the whole world, and not just the USA.

> > Due to the speed of a satellite, even the relatively short delays of an  
> > AX-25 network can result in errors of hundreds of miles.  
>  
> First, the error is only a few miles NOT hundreds. And Second, that is  
> why moving objects are transmitted with TIME,COURSE and SPEED. It donest  
> matter when it gets to you, since APRS Dead Reckoning will then be able to  
> place it correctly.

Do you have the spec available for "APRS Dead Reckoning" as I don't seem to see it in the protocol document. I question if it can do a good job in tracking an object in orbit and would like details.

> > Bob wants to use these position reports to make people aware of the  
> > passes of the sats, so that handheld and mobile users can use the the  
> > sats without needing a tracking program. My position is that it would be

> > far easier for these people to make use of a message giving the times and  
 > > azimuth of AOS, max el, and LOS, and the max el, transmitted shortly  
 > > before a pass begins. It is these numbers, not the position of a  
 > > satellite, that you actually need to track a sat with an Arrow antenna,  
 > > or use a D700 to transmit. This is what APRStk ought to transmit, not  
 > > bogus position reports...  
 >  
 > Wrong. AZ/EL angles only apply for one observer at one place on earth.  
 > The AZ/EL to the satellite is different for all observers. The only  
 > accurate info that is universal is the satellites POSITION, TIME and  
 > CSE/SPD vector. From this, all else can be determined by ALL observers no  
 > matter where they are.

So your typical handheld HT user is using a antenna with a beam width of  
 0.1 degrees or less?? WRONG. Typical beam widths are going to be on the  
 order of +-30 degrees for a antenna you can hold in your hand. As such,  
 small errors, such as from a APRStk station 50 miles away, won't amount to  
 much for the typical altitude of most PACSATs.

> The problem remains. APRS does not address speeds in excess of 999 Kts,  
 > yet we have 4 satellties using APRS, and we have a commitment for the  
 > International Space Station to use APRS and MIR/Shuttle will use APRS on  
 > occasion. THus APRS should address how it is going to handle these  
 > moving stations at orbital speeds.

Its called APRS Version 2.0. Propose your idea to the APRS-WG. BTW,  
 there is no reason you can't create your own, independent protocol to do this, but  
 I'd not try to mix it in the standard APRS Version 1.0 data stream IF  
 its going to give bogus reports, which apparently was going on. IMHO, this  
 is grounds for "APRS compatible" de-certification, if/when these labels are  
 assigned by the APRS-WG.

> I am open to any other suggestions as to how to incorporate these speeds  
 > into APRS that are backwards compatible to the existing users.

Satellite ICON = small body in orbit = ~17,500MPH = local display issue =  
 problem solved without a kludge to APRS V1.0 over the air protocol.

This wouldn't adversely affect legacy users as your suggestion might. Still  
 not a good solution for orbital prediction, but at least it wouldn't require  
 needless modification of the protocol.

-Jeff

---

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### 63. [aprsspec] Re: MACH Speeds

From: Terry Heatlie <kf6vte@slip.net>  
 Date: Sun, 19 Mar 2000 17:39:00 -0800  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-72207-2000.03.19-19.39.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

Bob Bruninga wrote:

>

[...]

> The problem remains. APRS does not address speeds in excess of 999 Kts,

[...]

> I proposed the MACH number approach above 975 Kts to allow for  
 > greater flexibilty...

I'm agnostic on whether to represent speeds > 999 kts in APRS.  
 But I'm compelled by my background (and doubtless my nit-picking  
 nature) to mention that to say something is moving at a Mach number  
 of 11 (for example) says nothing about what its speed is. Mach  
 number is a \*dimensionless ratio\* of the characteristic velocity  
 of a flow (for example the speed of an aircraft) \*to the speed of  
 sound in the undisturbed regions of the flow\*. So 1000 kts could  
 be any Mach number you like. If you specify that your fluid is  
 air, then the Mach number still varies with changes in conditions,

in particular with temperature.

Of course, you \*could\* say that the speed is Mach (x-974) in a standard atmosphere (homogenous air at STP). But why bother? Why not just say its (x-974)\*1000 kts (for example).

--

Terry Heatlie KF6VTC  
I'm riding in my fourth successive California AIDS ride to raise money for AIDS services, education and research. Please sponsor me online at [https://www.weborder.com/cgi-weborder/secure\\_form/sfaf/carfrm.html?2157](https://www.weborder.com/cgi-weborder/secure_form/sfaf/carfrm.html?2157)

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## 64. [aprsspec] Re: MACH Speeds

From: "jsr" <[kc5jgv@bobcats2.oursc.k12.ar.us](mailto:kc5jgv@bobcats2.oursc.k12.ar.us)>  
Date: Mon, 20 Mar 2000 09:34:21 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-72231-2000.03.19-21.33.04--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-72231-2000.03.19-21.33.04--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

For what its worth, I can see the usefulness of having the satellite information available to the Kenwood users. And the need to have a visual reference of the sat position at a given time. So why not instead of trying to make an object travel across the screen at ANY speed; instead put the object up at the apex (if that is the right word, I mean the highest point) relative to the issuing station with a time stamp that indicates the time of maximum coverage area.

It is obvious that this is a local use option. I certainly am not going to be interested in information about satellites from a station hundreds of miles away thus it couldn't possibly have any internet use. So how about it. You get the object and information out there prior to the satellites apex with a time of maximum coverage and usefulness; add in any additional information that you need such as time overhead or horizon to horizon or whatever. But forget the moving object issue because it may or may not be accurate and besides who would use it? The information is more important than the object moving. Then at the end of its usefulness send the delete code.

Well that is my point of view, for what its worth. I'd hope that Bob and Steve would be able put away this apparent personal issue between them and lets get back to improving this wonderful aspect of our HOBBY!!!

73

Scott, KC5JGV

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## 65. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 19 Mar 2000 23:24:32 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-72236-2000.03.19-22.25.55--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-72236-2000.03.19-22.25.55--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Jeff King wrote:

> > But your suggesting a modification to the protocol for a purpose it  
> > doesn't appear well suited for...  
> >  
> > 1) Forget the purpose. There are APRS stations moving at MACH25.  
>  
> Forget the purpose of APRS? Hold on a minute here...

I didn't say that. You were objecting to my purpose for needing to address orbital speeds in APRS. I was saying the purpose doesnt matter. We have the problem of APRS stations at orbital speeds that need to be addressed for whatever purpose.

> > Are we going to accomodate any speed above 999 or not?

>  
> There is no compelling reason at this time to. There are no commonly  
> available vehicles (save military) that can actively change  
> speed/course vectors part of their operation in excess of 999 mph.

We are not talking about "changing" vectors, we are talking about representing velocities. I already listed 4 existing APRS orbiting objects and 3 very well known manned vehicles that fly at those speeds.

> As I have already stated, very  
> excellent satellite tracking programs exist that can do a far better job then  
> what you are suggesting

Then you dont understand. I am using an excellent tracking program to generate the satellite positions. It is able to provide tracking accuracies to 0.5 degrees for LEO objects moving at rates as high as several degrees per second. I am suggesting NO OTHER method for tracking satellities.

> ..... without requiring modifications to the protocol  
> or redundant data to be sent over the air. Further, now that I understand what  
> you are trying to do, I believe the needs of the "dumb tracker" users can  
> better be addressed by Steve Dimse's suggestion.

But his suggestion is flawed as I previously noted. Lists of pointing angles are valid for only one position on earth. They are useless for everyone else.

Bob

---

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## 66. [aprsspec] Re: THD7 Position ambiguity

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 19 Mar 2000 23:37:15 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-72241-2000.03.19-22.36.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Carl wrote about letting a xxxx.00N/aaaaa.00W position imply a 1 mile ambiguity...:

> Nice. But the distance calculations ought be based upon the .00 setting  
> else similar paths will change distance each day - and the variation ought  
> be .51 -.49 rather than .00-.99 IYSWIM

Yes, I considered the .50/.50 as actually the best indicator too, but figured it would be even harder to find agreement to it... :-)

Yes, The D7 and D700 still compute from the 00 position.

Bob

---

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## 67. [aprsspec] Re: MACH SPEEDS

From: Jeff King <jjeff@aerodata.net>  
Date: Sun, 19 Mar 2000 23:52:08 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72248-2000.03.19-22.50.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

jsr wrote:

> So why not instead of trying  
> to make an object travel across the screen at ANY speed; instead put the  
> object up at the apex (if that is the right word, I mean the highest point)  
> relative to the issuing station with a time stamp that indicates the time  
> of maximum coverage area.

This is more or less what Steve Dimse suggested. Or at least it could be derived from his suggested method.

-Jeff

>  
> You get the object and information out there prior to the satellites apex  
> with a time of maximum coverage and usefulness; add in any additional  
> information that you need such as time overhead or horizon to horizon or  
> whatever. But forget the moving object issue because it may or may not be  
> accurate and besides who would use it? The information is more important  
> than the object moving. Then at the end of its usefulness send the delete  
> code.  
>  
> Well that is my point of view, for what its worth. I'd hope that Bob and  
> Steve would be able put away this apparent personal issue between them and  
> lets get back to improving this wonderful aspect of our HOBBY!!!  
>  
> 73  
>  
> Scott, KC5JGV  
>  
> ---  
> You are currently subscribed to aprsspec as: jeff@aerodata.net  
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## 68. [aprsspec] Re: MACH SPeeds

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 19 Mar 2000 23:53:19 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72249-2000.03.19-22.51.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob:

Lets see, I've addressed every point you made here at least once, and in some cases three times. Yet you keep going on and on without any acknowledgement of same.

This is pointless.....

-Jeff

Bob Bruninga wrote:

[...]

---  
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## 69. [aprsspec] Re: MACH SPeeds

From: "Steve Sampson" <ssampson@usa-site.net>  
Date: Sun, 19 Mar 2000 23:25:38 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72250-2000.03.19-23.24.24--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I think that people who want to communicate via the satellites should have more sophisticated software then dead-reckon.

If I have to pay money for it, then I want to run it with the Keps and have a quality track.

I need to know the Doppler based on my location, and at



400 MHz/9600 baud it may be more critical than dead-reckoning would predict.

Whatever the case, I don't want this huge vector blasting onto my screen. If it is moving across my position at 9000 m/s, all I want is a small vector that possibly is a Doppler based on my position, and is shown ahead of, or in trail of the satellite as it passes. Maybe blue and red colours, etc.

Make it so...

> This is pointless.....  
>  
> -Jeff

---

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## 70. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 20 Mar 2000 01:21:20 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72278-2000.03.20-00.22.10--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Steve Dimse wrote:

> On 3/19/00 6:10 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:  
> >First, the error is only a few miles NOT hundreds. And Second, that is  
> >why moving objects are transmitted with TIME,COURSE and SPEED. It donest  
> >matter when it gets to you, since APRS Dead Reckoning will then be able to  
> >place it correctly.

> Make up your mind...you told Jeff these reports are to help those without  
> access to real tracking programs on computers. Now you are saying you  
> need to use dead reckoning. Which is it?

You still dont understand the issues. I am posting the objects \*for\* those HT/Mobile users without tracking software. But as a consequence, the objects will also appear on everyone \*elses\* maps, and these will be \*DeadReckoned\* as a consequence (Thats what APRS does). So therefore they need to have a CSE and SPEED that is accurate so that they will be DR'ed properly... and not erroneously. In fact it was you who pointed out the erroneous DR that I am trying now to fix.

> > Bob wants to use these position reports to make people aware of the  
> > passes of the sats, so that handheld and mobile users can use the the  
> > sats without needing a tracking program. My position is that it would be  
> > far easier for these people to make use of a message giving the times and  
> > azimuth of AOS, max el, and LOS, and the max el, tranmitted shortly  
> > before a pass begins. It is these numbers, not the position of a  
> > satellite, that you actually need to track a sat...

Bob replied:

> >Wrong. AZ/EL angles only apply for one observer at one place on earth.  
> >The AZ/EL to the satellite is different for all observers....

Steve:

> You told me these are for transmission in local areas, not for worldwide  
> consumption. Have you changed your mind on this?

Nope. In Maryland, I expect my satellie objects will be seen out about 150 miles in all directions. Thus for the Shuttle in a 150 mile orbit, the difference in AZ/EL angles for a station south of me and one north of me can EASILY see different AZ angles by 180 degrees! and Elevation angle differences of 45 degrees or more. That's why posting AZ/EL angles is pointless.

Bob continued...

> >... the only accurate info that is universal is the satellite's  
> >POSITION, TIME and CSE/SPD vector. From this, all else can be  
> >determined by ALL observers no matter where they are.

> Well, Bob, you clearly are much better at trig-in-the-head than I.

Thanks. But it isn't rocket science. Just visualize two users, one north of me and one south of me during a north south pass and I think anyone can see the gross errors that AZ/EL predictions would cause.

> If you tell me I'm at 24 42.54N 81 24.63W, and the sat is at 28 12.83N  
> 83 22.63W, I sure can't figure out the elevation in my head. In fact,  
> neither can a computer, since you also need to figure in the altitudes. I  
> can guess it would be roughly NW...

Then you haven't seen the APRStk object on your D7 or D700. The Radio \*computes\* for you an exact azimuth based on the \*position\* of you and the satellite. The OBJECT also tells you the satellite's Frequency, AND the Distnace AND the RANGE... Everything you need. Just comparing the Distance to the 500 mile height can give you a very good idea of elevation angle. Example. If its 500 miles distant, then the angle is 45 degrees.

> On the other hand, if I know a pass starts at 4:30PM at 263 degrees,  
> reaches max elevation of 53 degrees elevation, 24 azimuth at 4:36 and  
> ends at 4:45 at 58 degrees, I have a great idea of where the sat will  
> travel....

Yep, but that is a personal prediction for your own given location. And how many of these personal AZ/EL predictions do you want me to clutter the airwaves with? To be as accurate as you demanded in your initial post, then I would have to send out say 16 such alerts, one for each 50 miles and each of the cardinal directions from my station. Then the poor users would have to figure out which of these 16 messages applied to him... A hopeless mess... I think the single OBJECT I am posting is much more effecient use of the channel.

> How about the users? Which would you rather see? Or are all of you tired  
> of this little glimpse at what the APRSWG was like? Promise, no more from  
> me on this subject, I've moved on...  
>  
> Steve K4HG

Yep, Here is what the users would choose from:

My way: A single U014 posit on their front panel showing the actual azimuth in real time and all the other info about FREQ, direction of movement and so forth no matter where they were.

Your way: Their message list (can only hold 16 messages) is full of lists of times, angles and Dopplers which they must then compare to their location (to konw which one to use) and then they have to compare the times with their watches to know what angle to use when, and when to tune...

Also, my ONE packet applies to the whole USA (if we can ever get the IGates to carry it), whereas your plan would take about 200 individual messages that could have errors of over 45 degrees.

The choice seems obvious to me...

Bob

---

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## 71. [aprsspec] THD7 as built

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Sun, 19 Mar 2000 23:52:59 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72285-2000.03.20-00.52.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, group -

There has been a fair amount of discussion related to things like "DX Spot" which have referred to "APRS as implemented by Kenwood" or variations, there-of.

Can someone tell me where to find the as-built description of the protocol in the Kenwood machines?

Many thanks,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 72. [aprsspec] Re: MACH SPEEDS

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 20 Mar 2000 01:53:32 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-72286-2000.03.20-00.53.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Jeff King wrote:

> > Bob wrote:  
> > The solution to the long vectors is a local display problem. APRSdos  
> > solved it with a Log length vector....  
>  
> A "local display problem" that would require changing the source code in  
> EVERY SINGLE APRS display program out there with the changes you propose.

No, they dont need to change it if their users will put up with speed  
vectors 10 times longer than their screens... APRS has always had a speed  
range of 1 to 999 MPH. If their software did not accomodate this, then  
its a local display problem.

> > No. APRSst is determining the CSE vector by its changing position  
> > relative to the GROUND, NOT by its true orbital vector. Thus it is quite  
> > valid over the few minutes of the USA and mid latitudes which comprise  
> > most of the population density.  
>  
> What about all the other APRS display apps out there? Also, any part of the  
> spec should work (IMHO) over the whole world, and not just the USA.

It does work everywhere. Satellite ground tracks are essentially straight  
lines on the surface of the spherical earth.

> Do you have the spec available for "APRS Dead Reckoning" as I don't seem  
> to see it in the protocol document. I question if it can do a good job in  
> tracking an object in orbit and would like details.

Simple physics. An object in motion tends to stay in motion along the  
same path unless operated on by an external force. In this case, the path  
is the ground track which is essentially a straight line.

Steve said:

> > > My position is that it would be  
> > > far easier for these people to make use of a message giving the times and  
> > > azimuth of AOS, max el, and LOS, and the max el, transmitted shortly  
> > > before a pass begins. It is these numbers, not the position of a  
> > > satellite, that you actually need to track a sat...

Bob said:

> > Wrong. AZ/EL angles only apply for one observer at one place on earth.  
> > The AZ/EL to the satellite is different for all observers. The only  
> > accurate info that is universal is the satellites POSITION, TIME and  
> > CSE/SPD vector.

Jeff said:

> So your typical handheld HT user is using a antenna with a beam width of  
> 0.1 degrees or less?? WRONG.

I dont know where you inferred 0.1 degree. About 60 degrees is probably  
the 3 dB beamwidth.

> Typical beam widths are going to be on the order of +-30 degrees for a  
> antenna you can hold in your hand. As such, small errors, such as from a  
> APRStk station 50 miles away, won't amount to much for the typical  
> altitude of most PACSATs.

You might say the error is small, but it is that kind of sloppiness that should not creep into APRS. Say my program predicts a pass of the Shuttle to peak at 60 degrees to the east. A user 150 miles east of me sees that prediction goes out to the EAST side of his building to show off to his colleagues. Boy will he look stupid when the satellite passes behind his building to the west at 60 degrees and he cannot hear it because it is blocked by the building!

Bob also said:

> > The problem remains. APRS does not address speeds in excess of 999 Kts,  
> > yet we have 4 satellties using APRS, and we have a commitment for the  
> > International Space Station to use APRS and MIR/Shuttle will use APRS on  
> > occasion. Thus APRS should address how it is going to handle these  
> > moving stations at orbital speeds.  
>  
> Its called APRS Version 2.0. Propose your idea to the APRS-WG.

I thought I just did...

de WB4APR, Bob

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### 73. [aprsspec] "Kenwood" symbol

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sun, 19 Mar 2000 23:54:00 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-72287-2000.03.20-00.53.25--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-72287-2000.03.20-00.53.25--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Can someone suggest what a "Kenwood" symbol ought to look like?

Thanks,

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
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A computer without Windows is like a cake without mustard. - anonymous

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### 74. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 20 Mar 2000 02:09:50 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-72288-2000.03.20-01.09.22--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-72288-2000.03.20-01.09.22--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Jeff King wrote:

> Lets see, I've addressed every point you made here at least once, and in  
> some cases three times. Yet you keep going on and on without any  
> acknowledgement of same.  
>  
> This is pointless.....

Hummhh.. I thought I replied to every one of your points. But I think this is kinda getting boring too...

bob

---

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## 75. [aprsspec] Re: MACH Speeds

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 20 Mar 2000 02:21:28 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-72289-2000.03.20-01.21.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 19 Mar 2000, Steve Sampson wrote:

> I think that people who want to communicate via the satellites  
> should have more sophisticated software then dead-reckon.

They will/do. The object will be updated by a true prediction program every minute. No one has said that DRing is how we plan on plotting the satellites in APRS. People have gotten everythign totally confused. DRing is NOT the intent at all. It is simply a consequence that must be addressed for moving stations for those objects properly and accurately placed on a map by ANY program.

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## 76. [aprsspec] Re: "Kenwood" symbol

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Mon, 20 Mar 2000 07:48:15 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-72300-2000.03.20-02.23.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-72287-2000.03.20-00.53.25--Ian.Wade#care4free.net@lists.tapr.org>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes  
>  
>Can someone suggest what a "Kenwood" symbol ought to look like?

Well, over here in the UK Kenwood make kitchen appliances like food mixers etc .....

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrrl.net |
| | |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

---

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---

## 77. [aprsspec] Re: MACH Speeds

From: Cap Pennell <[cap@cruzio.com](mailto:cap@cruzio.com)>  
Date: Mon, 20 Mar 2000 01:00:09 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-72311-2000.03.20-03.14.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At 10:53 PM 3/19/2000, Bob Bruninga wrote:

>Jeff said:  
> > Its called APRS Version 2.0. Propose your idea to the APRS-WG.  
>  
>I thought I just did...  
>

>de WB4APR, Bob

I had meant to make some more comments on APRS Version 1.0 too, but its public discussion period ended on December 19, 1999. <http://www.tapr.org/tapr/html/Faprswg.html> ;-)

But seriously now, I don't see any good reason for this to have become such a big fuss. Seems no terrestrial objects are going to use the last few numbers possible (greater than 900 knots) in the speed field. Why not allow Bob to use those numbers to display satellite speeds in his applications? If they cause long DR line displays that bother other than Kenwood D7/D700 users, have the bothered users simply turn off DR in their APRS applications. I've been coping with long DR lines from mobiles using \$GPRMC for years already as things are.

73, Cap KE6AFE

--

Cap Pennell

Santa Cruz, CA 95062-1002 3658.93N/12200.91W [CM86xx]

email: cap@cruzio.com home page: <http://members.cruzio.com/~cap>

packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

---

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---

## 78. [aprsspec] Re: "Kenwood" symbol

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>

Date: Mon, 20 Mar 2000 06:53:49 -0600

To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <[LYR11589-72331-2000.03.20-06.52.36--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-72331-2000.03.20-06.52.36--lyris.aprsspec#tapr.org@lists.tapr.org)>

Rendered body type: text/plain

Maybe a "rising sun" flag with a K in it/

----- Original Message -----

>

> Can someone suggest what a "Kenwood" symbol ought to look like?

---

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## 79. [aprsspec] Re: "Kenwood" symbol

From: Keith Sproul <[ksproul@vger.rutgers.edu](mailto:ksproul@vger.rutgers.edu)>

Date: Mon, 20 Mar 2000 16:01:05 -0500

To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)

Message-ID: <[LYR11589-72435-2000.03.20-15.01.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-72435-2000.03.20-15.01.44--lyris.aprsspec#tapr.org@lists.tapr.org)>

Rendered body type: text/plain

In the radio and on Win/MacAPRS, it is the stylized 'W'..

This is a black 'W' with a red triangle above the center piece of the 'W'

<http://www.kenwoodusa.com/>

for an example of the 'W'

>Can someone suggest what a "Kenwood" symbol ought to look like?

>

>Thanks,

>

>Jim Wagner

Keith Sproul

732 445-3695 Office

Student Housing Network Coordinator

732 445-2968 Fax

<mailto:ksproul@rci.rutgers.edu>

732 821-4828 Home

<http://dorm.rutgers.edu/~ksproul/>

WU2Z

---

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---

## 80. [aprsspec] help

From: n3zll@amsat.org  
Date: Thu, 23 Mar 2000 12:34:54 +0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-73156-2000.03.23-11.34.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

help

-----  
Download ICQ at <http://www.icq.com>

---

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---

## 81. [aprsspec] Re: help

From: David VanHorn <dvanhorn@cedar.net>  
Date: Thu, 23 Mar 2000 16:25:59 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-73179-2000.03.23-15.25.57--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----  
Hash: SHA1

At 12:34 PM 3/23/00 +0500, n3zll@amsat.org wrote:  
>help

Could you be a little less specific?

-----BEGIN PGP SIGNATURE-----  
Version: PGPFreeware 6.5.2 for non-commercial use <<http://www.pgp.com>>

iQA/AwUBONq2F4FlGDz1l6VWEQJMQwCg4iuNzcKyn2diEhXD6+KKIjsDfq4AoKnK  
09jqB8+gn3IgtIs/SkAahCnm  
=Egca  
-----END PGP SIGNATURE-----

---

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---

## 82. [aprsspec] [OT] Irvine, CA

From: "Thomas M. Schaefer" <toms@inconnect.com>  
Date: Fri, 24 Mar 2000 10:49:10 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-73355-2000.03.24-11.46.17--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I am going to be in Irvine, Ca on Monday and Tuesday nights. Anyone know of any club meetings or other activities I might want to attend.

Tom NY4I

---

## 83. [aprsspec] APRS Protocol 1.0.1g documentation errors

From: Bill Diaz <billdiaz@megsinet.net>  
Date: Sun, 26 Mar 2000 19:26:32 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-73782-2000.03.26-19.29.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ian,

While attempting to write code to decode compressed position reports an error in the examples was found.

Chapter 9, Compressed Positon Report Data Format, page 32,  
Lat,Long decoding :

To decode a compressed lat/long, the reverse process is needed. That is, if YYYY is represented as y1,y2,y3,y4 and XXXX as x1,x2,x3,x4, then:

$$\text{Lat} = 90 - ((y1-33)*91^3 + (y2-33)*91^2 + (y3-33)*91 + y4-33) / 380972$$
$$\text{Long} = -180 + ((x1-33)*91^3 + (x2-33)*91^2 + (x3-33)*91 + x4-33) / 190486$$

For example, if the compressed value of the longitude is <+%A (as computed above), the calculation becomes:

```
Long = -180 + (27*91^3 + 10*91^2 + 4*91 + 32) / 190486
= -180 + (20346417 + 82810 + 364 + 32) / 190486
= -180 + 107.25
= -72.75 degrees
```

Look at the statement  $Long = -180 + (20346417 + 82810 + 364 + 32) / 190486$

The Value 82810 is supposed to be  $91^2$  or 8281, not 82810.

The next problem I encountered had to do with the precedence of math operations. I copied the example almost verbatim. Must be getting lazy in my old age. The results of decoding the compressed location data were not within reasonable limits. I modified the example code to ensure that math operations were carried out in the proper order. That is, when in doubt as to the precedence of operations, add parentheses! Here is what I came up with :

```
Lat := 90 - (((CLat[1]-33) * 753571) + ((CLat[2]-33) * 8281)
 + ((CLat[3]-33) * 91) + (CLat[4]-33)) / 380972;

Lon := -180 + (((Clon[1]-33) * 753571) + ((Clon[2]-33) * 8281)
 + ((Clon[3]-33 * 91)) + (Clon[4]-33)) / 190486;
```

The results now appear to be reasonable.

Several other examples in the documentation do not clearly illustrate the required precedence of math operations. These may work in some versions of Basic, but the purpose of examples should be to provide the reader with example code or algorithms written to clearly illustrate the math processes required.

Overall, the documentation is a superb piece of work. Hopefully, minor errors, and modified examples could be provided in any future release.

Bill KC9XG

---

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---

## 84. [aprsspec] Re: APRS Protocol 1.0.1g documentation errors

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Sun, 26 Mar 2000 21:19:23 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-73795-2000.03.26-21.18.43--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-73795-2000.03.26-21.18.43--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> Several other examples in the documentation do not clearly illustrate the  
> required precedence of math operations. These may work in some versions of  
> Basic, but the purpose of examples should be to provide the reader with  
example  
> code or algorithms written to clearly illustrate the math processes required.

My original comment was, that if there is any math past a sum or product, it should probably be written using standard math notation, and forget about the B.A.S.I.C., Fortran, C, or Forth examples.

The spec is being written using Microsoft Word, so I know that math symbols are available. Actually, I would rather it be left in Microsoft Word than converted to PDF, which is completely useless if you want to make notes to yourself. You would have to print it out and OCR it back in, and then correct all the errors. Really a mess. Just leave it in Word.

---

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## 85. [aprsspec] Re: APRS Protocol 1.0.1g documentation errors

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Mon, 27 Mar 2000 07:55:58 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-73841-2000.03.27-00.56.40--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-73841-2000.03.27-00.56.40--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain



Hi Bill. Thanks for the input.

>For example, if the compressed value of the longitude is <+%A (as computed  
>above), the calculation becomes:

>Long = -180 + (27\*91^3 + 10\*91^2 + 4\*91 + 32) / 190486  
                    ^^^  
                    ^^^

>  
>Look at the statement Long = -180 + (20346417 + 82810 + 364 + 32) / 190486  
>  
>The Value 82810 is supposed to be 91^2 or 8281, not 82810.

No, it is \*ten times\* 91^2 (see the third line of your quote above).

>  
>The next problem I encountered had to do with the precedence of math  
>operations.

I know. There are several misleading math statements throughout the spec, arising mainly from just taking the statements from original documentation. There was a very tight deadline to get the draft finished in December, and there wasn't time to straighten it all out. I'm now fixing all these statements to make them consistent and mathematically rigorous.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

--  
+-----+  
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |  
| email: g3nrw@arrl.net |  
| |  
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |  
+-----+

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---

## 86. [aprsspec] RE: [aprssig] Opening WinAPRS w/ D700a

From: Bill Diaz <billdiaz@megsinet.net>  
Date: Wed, 29 Mar 2000 09:08:54 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-74264-2000.03.29-09.12.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Jonathon,

I believe the "port failed to open" error can be experienced when attempting to open a port that is being used by another application. Com ports can not be shared between applications. Perhaps you had another application using the comport when you experienced the error? Is the Kenwood control program still running?

Bill KC9XG

On Wednesday, March 29, 2000 8:46 AM, Jonathan Kaplan [SMTP:jonk@jskent.com] wrote:

> Hi all,  
>  
> I just finishing installing a D700a with a small PharosGPS  
> receiver and it works greats, thank you very much. But now when I try  
> to open the VHF TNC port inside WinAPRS v 224 that I have installed  
> on a 486 laptop running Win95, I get "port failed to open". I'm using  
> the DB-9 connector on the radio and I know the port parameters are  
> OK ( I just before configured the radio using Kenwood's control program).  
> I also get no data inside the terminal window. Can someone provide a  
> checklist of things that might be wrong?  
>  
> Thanks,  
>

> JonathanK06XS  
>  
>  
> ---  
> You are currently subscribed to aprssig as: BILLDIAZ@MEGSINET.NET  
> To unsubscribe send a blank email to leave-aprssig-2095E@lists.tapr.org  
  
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## 87. [aprsspec] Hurricane Spec

From: "Dale Huguley" <kg5qd@worldnet.att.net>  
Date: Fri, 31 Mar 2000 09:59:58 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-74581-2000.03.31-04.01.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
  
Hi All,  
  
A not so friendly reminder that it is now 60 Days to the start of the Atlantic Hurricane Season, with no useable hurricane protocol defined. I believe the Working Group has dropped the ball.  
  
73 de KG5QD Dale  
  
---  
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---

## 88. [aprsspec] Re: Hurricane Spec

From: "Steve Sampson" <ssampson@usa-site.net>  
Date: Fri, 31 Mar 2000 05:42:30 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-74583-2000.03.31-05.41.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
  
They said they weren't developing anything new, just documenting what was already there. How is not developing \*any\* protocol "dropping the ball?"  
  
They didn't develop a forest fire protocol either...  
  
What's wrong with just putting a hurricane symbol on the map?  
  
----- Original Message -----  
> Hi All,  
> A not so friendly reminder that it is now 60 Days to the start of the  
> Atlantic Hurricane Season, with no useable hurricane protocol defined. I  
> believe the Working Group has dropped the ball.  
  
---  
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## 89. [aprsspec] Re: Hurricane Spec

From: csuprin@mitre.org (Charles Suprin)  
Date: Fri, 31 Mar 2000 07:02:32 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org (APRS Spec Discussion List)  
Message-ID: <LYR11589-74586-2000.03.31-06.02.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
  
I agree. They claimed to be documenting APRS. Not enhancing. That is something to be left to the next version.  
  
Charles  
  
Steve Sampson wrote:  
>  
> They said they weren't developing anything new, just documenting  
> what was already there. How is not developing \*any\* protocol  
> "dropping the ball?"  
>

> They didn't develop a forest fire protocol either...  
>  
> What's wrong with just putting a hurricane symbol on the map?  
>  
> ----- Original Message -----  
>  
> > Hi All,  
> > A not so friendly reminder that it is now 60 Days to the start of the  
> > Atlantic Hurricane Season, with no useable hurricane protocol defined. I  
> > believe the Working Group has dropped the ball.  
>  
> ---  
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## 90. [aprsspec] Re: Hurricane Spec

From: "Dale Huguley" <kg5qd@worldnet.att.net>  
Date: Fri, 31 Mar 2000 12:08:17 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-74588-2000.03.31-06.09.46--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve and all-

The hurricane spec in the Draft of the protocol bears very little relationship to what was used up until now- It is new and not used by anyone. I jumped up and down about this 4 months ago and was assured it would be taken care of. The problem with "just putting a hurricane symbol on the map" is that the current position of the hurricane may be the least important piece of information needed. What areas the wind fields affect, and what the predicted wind fields might be, are far more important for emergency planning, both personal and governmental.

Steve Sampson Said:  
-----Original Message-----

>They said they weren't developing anything new, just documenting  
>what was already there. How is not developing \*any\* protocol  
>"dropping the ball?"  
>  
>They didn't develop a forest fire protocol either...  
>  
>What's wrong with just putting a hurricane symbol on the map?  
>  
>

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## 91. [aprsspec] Re: Hurricane Spec

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 31 Mar 2000 09:07:14 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-74597-2000.03.31-08.07.13--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 31 Mar 2000, Dale Huguley wrote:

> A not so friendly reminder that it is now 60 Days to the start of the  
> Atlantic Hurricane Season, with no useable hurricane protocol defined. I  
> believe the Working Group has dropped the ball.

I thought the hurricane stuff was working fine. It has these features:

- 1) Both Hurricane, Tropical Storm and Tropical Depression ICONS defined
- 2) Icon for future predict posits defined
- 3) Include CSE and SPD of movement of the storms
- 4) Reports peak and sustained winds
- 5) Reports Barometric pressure
- 6) Reports radius circles for TROP and HR force winds in two colors

7) Offsets the wind circle into the danger quadrant  
proportional to vector sum of wind speeds and storm track

What is missing?

Bob

---

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## 92. [aprsspec] Which Hurricane Spec?

From: "Dale Huguley" <[kg5qd@worldnet.att.net](mailto:kg5qd@worldnet.att.net)>  
Date: Fri, 31 Mar 2000 23:10:39 -0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-74718-2000.03.31-17.12.17--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-74718-2000.03.31-17.12.17--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob and all-

So which spec should I use- the one contained in wx.txt in the readme  
folder of Dos Aprs - or the Draft Protocol?

They are not the same- nor are they compatible

If it is the Draft Protocol, is everyone going to get a new version out in  
time for Hurricane season?

If it is the old spec, why hasn't the Draft Protocol been changed to  
conform?

The Draft Protocol has the central pressure moved to the end of the string  
and a digit added which means that the wind fields will not parse properly  
in any known version of dos/mac/win/palm/x/aprs.

I pointed this out in January.

73 de kg5qd Dale

>

>What is missing?

>

>Bob

>

>

>

>---

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# April 2000

Original source file: aprsspec.0004

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssid/aprsspec/mail\\_archive/aprsspec.0004](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprsspec/mail_archive/aprsspec.0004)

## 1. [aprsspec] Re: Which Hurricane Spec?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 1 Apr 2000 09:29:52 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-74808-2000.04.01-08.29.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 31 Mar 2000, Dale Huguley wrote:

> The Draft Protocol has the central pressure moved to the end of the string  
> and a digit added which means that the wind fields will not parse properly  
> in any known version of dos/mac/win/palm/x/aprs.  
> I pointed this out in January.

We are waiting for comments from the SProuls. My software doesnt care. I dont know how the fields got moved around, but My opinion is that we go with what was in the dos TXT files unless someone can come up with why it was changed...

Bob

---

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---

## 2. [aprsspec] Re: Which Hurricane Spec?

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 01 Apr 2000 14:28:55 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-74882-2000.04.01-13.28.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

> My opinion is that we go  
> with what was in the dos TXT files unless someone can come up with why it  
> was changed...

I think your missing Dale's point (and one I feel strongly on also). Your extensions need to be incorporated into the APRSPEC. I would think that one of the reasons for the SPEC is to reduce so many different implementations of each authors favorite "protocol". Thats not to say what you or anyone else is doing is "wrong", its just a process now exists to addresse these changes/extensions.

-Jeff

---

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---

## 3. [aprsspec] Re: Which Hurricane Spec?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 2 Apr 2000 23:43:23 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75085-2000.04.02-22.43.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Thats what I mean. Unless someone can say why the SPEC got it diffeent from my WX.TXT file, then lets fix the spec to what it should be...

bob

On Sat, 1 Apr 2000, Jeff King wrote:

>  
>  
> Bob Bruninga wrote:

```

>
> > My opinion is that we go
> > with what was in the dos TXT files unless someone can come up with why it
> > was changed...
>
> I think your missing Dale's point (and one I feel strongly on also). Your extensions
> need to be incorporated into the APRSPEC. I would think that one of the
> reasons for the SPEC is to reduce so many different implementations of each authors
> favorite "protocol". Thats not to say what you or anyone else is doing is "wrong",
> its just a process now exists to addresse these changes/extensions.
>
> -Jeff
>
>
>

```

APRSDos REPLY/COMMENT:

Reply mail addr: [wb4apr@amsat.org](mailto:wb4apr@amsat.org)  
 US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
 See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
 See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
 See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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#### 4. [aprsspec] dGPS

From: "Darryl Smith" <[darryl@radio-active.net.au](mailto:darryl@radio-active.net.au)>  
 Date: Mon, 3 Apr 2000 18:03:49 +1000  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Message-ID: <LYR11589-75130-2000.04.03-03.03.21--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

G'Day All...

It has just been suggested to me that the T0 callsign for dGPS transmissions  
 should not be dGPS but dGPSxxxx (or how ever many characters is allowed by  
 the TNC) with the xxxx being the station ID of the dGPS station. Also in Ham  
 Radio maybe we should be coordinating dGPS station ID's and recording them  
 somewhere centrally (like on the iGATE database)...

I know this is only a partial SPEC issue... But I thought I would raise it  
 here....

Darryl

-----

Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia  
 Mobile Number 0412 929 634 [+61 4 12 929 634 International]  
[Darryl@radio-active.net.au](mailto:Darryl@radio-active.net.au) | [www.radio-active.net.au](http://www.radio-active.net.au) for domain names

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#### 5. [aprsspec] RE: dGPS

From: "Sadowski, Allan" <[allan.sadowski@ncshp.org](mailto:allan.sadowski@ncshp.org)>  
 Date: Mon, 3 Apr 2000 08:10:24 -0400  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Message-ID: <LYR11589-75150-2000.04.03-07.10.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

Would there be some benefit to the xxxx being the Maidenhead square rather  
 than  
 a lookup table value?

```

> -----Original Message-----
> From: Darryl Smith [SMTP:darryl@radio-active.net.au]
> Sent: Monday, April 03, 2000 4:04 AM
> To: APRS Spec Discussion List
> Subject: [aprsspec] dGPS
>
> G'Day All...
>
> It has just been suggested to me that the T0 callsign for dGPS

```

> transmissions  
> should not be dGPS but dGPSxxxx (or how ever many characters is allowed by  
> the TNC) with the xxxx being the station ID of the dGPS station. Also in  
> Ham  
> Radio maybe we should be coordinating dGPS station ID's and recording them  
> somewhere centrally (like on the iGATE database)...  
>  
> I know this is only a partial SPEC issue... But I thought I would raise it  
> here....  
>  
> Darryl  
>

---

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---

## 6. [aprsspec] Re: dGPS

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 3 Apr 2000 09:14:07 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75170-2000.04.03-08.14.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 3 Apr 2000, Darryl Smith wrote:

> It has just been suggested to me that the TO callsign for dGPS transmissions  
> should not be dGPS but dGPSxxxx (or how ever many characters is allowed by  
> the TNC) with the xxxx being the station ID of the dGPS station. Also in Ham  
> Radio maybe we should be coordinating dGPS station ID's and recording them  
> somewhere centrally (like on the iGATE database)...

Can you explain further? The full callsign of the DGPS station is in the  
FROM field. So I guess I dont see why it needs to be in the TO field too?  
But if there is a need, let us know...

Bob

---

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## 7. [aprsspec] Re: dGPS

From: "Sadowski, Allan" <allan.sadowski@ncshp.org>  
Date: Mon, 3 Apr 2000 09:18:34 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75172-2000.04.03-08.18.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Now there is something that would help (on a channel that had lots of DGPS  
stations) - having dGPSxxxx with the xxxx being maidenhead square... then  
gateways would only  
relay the nearest dGPS station... and/or your system would only select the  
dGPS  
station that had the best info (nearest to you....)

ALOHA  
AH6LS

> -----Original Message-----  
> From: Bob Bruninga [SMTP:bruninga@nadn.navy.mil]  
> Sent: Monday, April 03, 2000 9:14 AM  
> To: APRS Spec Discussion List  
> Cc: APRS Spec Discussion List  
> Subject: [aprsspec] Re: dGPS  
>  
> On Mon, 3 Apr 2000, Darryl Smith wrote:  
>  
> > It has just been suggested to me that the TO callsign for dGPS  
> transmissions  
> > should not be dGPS but dGPSxxxx (or how ever many characters is allowed  
> by  
> > the TNC) with the xxxx being the station ID of the dGPS station. Also in  
> Ham  
> > Radio maybe we should be coordinating dGPS station ID's and recording  
> them

> > somewhere centrally (like on the iGATE database)...  
>  
> Can you explain further? The full callsign of the DGPS station is in the  
> FROM field. So I guess I don't see why it needs to be in the TO field too?  
> But if there is a need, let us know...  
>  
> Bob  
>

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---

## 8. [aprsspec] Re: dGPS

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Mon, 3 Apr 2000 08:58:04 -0500 (CDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-75183-2000.04.03-08.58.17--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-75183-2000.04.03-08.58.17--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> From: "Darryl Smith" <[darryl@radio-active.net.au](mailto:darryl@radio-active.net.au)>  
> Subject: [aprsspec] dGPS  
> Date: Mon, 3 Apr 2000 18:03:49 +1000  
>  
> It has just been suggested to me that the TO callsign for dGPS transmissions  
> should not be dGPS but dGPSxxxx (or how ever many characters is allowed by  
> the TNC) with the xxxx being the station ID of the dGPS station. ...

The AX.25 specification states that call signs are six upper case or  
numeric characters, blank filled.

-tjs

---

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---

## 9. [aprsspec] Re: dGPS

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Mon, 03 Apr 2000 13:40:23 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-75224-2000.04.03-12.39.19--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-75224-2000.04.03-12.39.19--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Darryl Smith wrote:

> G'Day All...  
>  
> It has just been suggested to me that the TO callsign for dGPS transmissions  
> should not be dGPS but dGPSxxxx (or how ever many characters is allowed by  
> the TNC) with the xxxx being the station ID of the dGPS station.

Would need to be dGxxxx (or possibly dGPxxx-x).

But the station ID is already in the DGPS data stream, other than human readability,  
what value would the station id be in the callsign field?

> Also in Ham  
> Radio maybe we should be coordinating dGPS station ID's and recording them  
> somewhere centrally (like on the iGATE database)...

On the TAPR DGPS, most are using "73" and I don't believe they have an official  
coordination from any body that is already doing this. I'm not sure of the ramifications of  
having the same station ID, other than likely it's "not good". Also, you need to remember  
that the TAPR DGPS is not the only source of DGPS data available to hams. Some are now  
experimenting with DGPS over IP, which typically uses the coast guard stations for its  
data source (but can use anything).

> I know this is only a partial SPEC issue... But I thought I would raise it  
> here....

Being the station ID is in the DGPS stream already (which is clearly defined) and there  
is no mechanism (that I know of) to coordinate station ID's for amateur DGPS stations,  
it might be best for the spec to avoid this issue entirely.

Just my thoughts.

-Jeff



---

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---

## 10. [aprsspec] RE: dGPS

From: "Darryl Smith" <[darryl@radio-active.net.au](mailto:darryl@radio-active.net.au)>  
Date: Tue, 4 Apr 2000 06:21:10 +1000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "'APRS Spec Discussion List'" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-75241-2000.04.03-15.20.57--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

G'Day

To explain further, the way that dGPS works is that there is a 'STATION ID' encoded in the dGPS data. This is a number from 0 to 1023. If the data from two dGPS stations using the same 'STATION ID' at different locations is sent to a single GPS the results could lead to bizzare and very incorrect results.

Whay I am suggesting is that

a) we encode the 'STATION ID' as part of the TO callsign e.g. dG0073 for StationID 0073. dG1023 for StationID 1023 etc. This would allow users to easally filter the data based on callsign rather than the content of the data which would be nasty if you were wanting to do it in PC software (one more area of bugs) or a PIC for teh GARMIN RTCM Rx Packet problem...

b) But we would need to make sure that all users used a different STATION ID... Simple way would be to suggest a number based on a HASH of the callsign... Or at least encourage random numbers.

I believe there is some software in 'C' being releast at some stage for MOT to RTCM conversions so we may as well get this issue sorted now.... Also I have during testing been feeding dGPS to the iGATE....

Darryl

-----

Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia  
Mobile Number 0412 929 634 [+61 4 12 929 634 International]  
[Darryl@radio-active.net.au](mailto:Darryl@radio-active.net.au) | [www.radio-active.net.au](http://www.radio-active.net.au) for domain names

-----Original Message-----

From: Bob Bruninga [[mailto:bruninga@nadn.navy.mil](mailto:mailto:bruninga@nadn.navy.mil)]  
Sent: Monday, April 03, 2000 11:14  
To: Darryl Smith  
Cc: APRS Spec Discussion List  
Subject: Re: [aprsspec] dGPS

On Mon, 3 Apr 2000, Darryl Smith wrote:

> It has just been suggested to me that the TO callsign for dGPS transmissions  
> should not be dGPS but dGPSxxxx (or how ever many characters is allowed by  
> the TNC) with the xxxx being the station ID of the dGPS station. Also in  
Ham  
> Radio maybe we should be coordinating dGPS station ID's and recording them  
> somewhere centrally (like on the iGATE database)...

Can you explain further? The full callsign of the DGPS station is in the FROM field. So I guess I dont see why it needs to be in the TO field too? But if there is a need, let us know...

Bob

---

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## 11. [aprsspec] RE: dGPS

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Mon, 3 Apr 2000 16:04:24 -0500 (CDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <LYR11589-75259-2000.04.03-16.04.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> From: "Darryl Smith" <darryl@radio-active.net.au>  
> Subject: [aprsspec] RE: dGPS  
> Date: Tue, 4 Apr 2000 06:21:10 +1000  
>  
> To explain further, the way that dGPS works is that there is a 'STATION ID'  
> encoded in the dGPS data. This is a number from 0 to 1023. If the data from  
> two dGPS stations using the same 'STATION ID' at different locations is sent  
> to a single GPS the results could lead to bizzare and very incorrect  
> results.  
> [...]

I probably don't understand something fundamental, but...

Why don't you simply differentiate DGPS stations based of the "from"  
call sign? Uniqueness is then assured, (plus or minus misconfiguration).

Alternatively, you could concatenate the "from" call and the "station id"  
prior to testing for equality.

-tjs

---

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## 12. [aprsspec] RE: dGPS

From: Steve Dimse <k4hg@tapr.org>  
Date: Mon, 3 Apr 2000 17:19:12 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75264-2000.04.03-16.19.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/3/00 5:04 PM Tim Salo (salo@networkcs.com) wrote:

>> To explain further, the way that dGPS works is that there is a 'STATION ID'  
>> encoded in the dGPS data. This is a number from 0 to 1023. If the data from  
>> two dGPS stations using the same 'STATION ID' at different locations is sent  
>> to a single GPS the results could lead to bizzare and very incorrect  
>> results.  
>> [...]

>  
>I probably don't understand something fundamental, but...

>Why don't you simply differentiate DGPS stations based of the "from"  
>call sign? Uniqueness is then assured, (plus or minus misconfiguration).

>  
>Alternatively, you could concatenate the "from" call and the "station id"  
>prior to testing for equality.

>  
The way the DGPS is generally used is the raw data from a TNC is passed  
to the input of a GPS without further processing. It can indeed cause  
problems if multiple stations use the same station ID. The answer is  
local coordination of ID's. Adding another ID code in the to call does  
nothing to solve the problem.

Steve K4HG

---

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## 13. [aprsspec] RE: dGPS

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 03 Apr 2000 17:52:50 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75266-2000.04.03-16.52.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Darryl Smith wrote:

> Whay I am suggesting is that  
> a) we encode the 'STATION ID' as part of the T0 callsign e.g. dG0073 for  
> StationID 0073. dG1023 for Station 1023 etc. This would allow users to  
> easally filter the data based on callsign rather than the content of the  
> data which would be nasty if you were wanting to do it in PC software (one

> more area of bugs) or a PIC for teh GARMIN RTCM Rx Packet problem...

Yeap, but the Reference station I.D. is in the first word of each DGPS message. Its the 15th through 24th bit (30 bits total including parity). It should be the first thing after the "DGPS". 30 bits is not to much to deal with even for a PIC.

In any case, you really should only have "one" (the best) DGPS station in each are, or make sure the data is valid for each area. You don't want to be sending Point Blunt data in Germany, for example when more local data is available. But that is more a common sense issue then anything else.

> b) But we would need to make sure that all users used a different STATION  
> ID... Simple way would be to suggest a number based on a HASH of the  
> callsign... Or at least encourage random numbers.

Yes different ID's. But I believe there is already a body that assigns ID's. I think with DGPS-IP using commercial services, you'd be well advised not to have people picking them randomly.

While part b) is a worthy point to discuss, I think it is outside the scope of the APRSSPEC.

-Jeff

---

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## 14. [aprsspec] RE: dGPS

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 03 Apr 2000 17:53:05 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75267-2000.04.03-16.52.20--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Dimse wrote:

> The answer is  
> local coordination of ID's. Adding another ID code in the to call does  
> nothing to solve the problem.

And who would do this? I thought these ID's were assigned by the Coast Guard.

This is why I earlier stated that I thought the APRS-WG shouldn't touch this. No need to deal with it as its already been delt with.

-Jeff

---

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## 15. [aprsspec] RE: dGPS

From: Steve Dimse <k4hg@tapr.org>  
Date: Mon, 3 Apr 2000 18:03:10 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75270-2000.04.03-17.03.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/3/00 5:53 PM Jeff King (jeff@aerodata.net) wrote:

>> The answer is  
>> local coordination of ID's. Adding another ID code in the to call does  
>> nothing to solve the problem.  
>  
>And who would do this? I thought these ID's were assigned by the Coast  
>Guard.  
>  
>This is why I earlier stated that I thought the APRS-WG shouldn't touch this.  
>No need to deal with it as its already been delt with.  
>  
I agree. The ID's are coordinated by the CG, but I very much doubt they will be giving them out to hams. The idea is just to pick a number

different from that which everyone else is using. Since there is no crossover between the APRS DGPS transmitters and the CG ones, there should not be any problem...

Steve K4HG

---

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---

## 16. [aprsspec] RE: dGPS

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Mon, 3 Apr 2000 17:06:36 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-75271-2000.04.03-17.07.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-75271-2000.04.03-17.07.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

No. You just set the switches on your DGPS. I used my home address, but I put it in backwards, so it's reverse binary, oops...

The Coast Guard only handles Coast Guard stuff, they don't have the manpower to handle every frequency someone puts two or more DGPS's on.

I do think the whole DGPS issue is going to go away in a few years, as the Coast Guard fills all the gaps with its 300 kHz stations. Hombrew DGPS will no longer be needed.

----- Original Message -----

> > The answer is  
> > local coordination of ID's. Adding another ID code in the to call does  
> > nothing to solve the problem.  
>  
> And who would do this? I thought these ID's were assigned by the Coast  
> Guard.

---

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---

## 17. [aprsspec] RE: dGPS

From: "Sadowski, Allan" <[allan.sadowski@ncshp.org](mailto:allan.sadowski@ncshp.org)>  
Date: Mon, 3 Apr 2000 18:10:41 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "'APRS Spec Discussion List'" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-75272-2000.04.03-17.10.31--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-75272-2000.04.03-17.10.31--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Let us NOT get in the US concentric mode too far... think the WORLD view... for areas not covered by USCG...

ALOHA  
AH6LS

> -----Original Message-----

> From: Steve Sampson [SMTP:[ssampson@usa-site.net](mailto:ssampson@usa-site.net)]  
> Sent: Monday, April 03, 2000 6:07 PM  
> To: APRS Spec Discussion List  
> Subject: [aprsspec] RE: dGPS  
>

> No. You just set the switches on your DGPS. I used my home  
> address, but I put it in backwards, so it's reverse binary, oops...

>  
> The Coast Guard only handles Coast Guard stuff, they don't  
> have the manpower to handle every frequency someone puts  
> two or more DGPS's on.

>  
> I do think the whole DGPS issue is going to go away in a few  
> years, as the Coast Guard fills all the gaps with its 300 kHz  
> stations. Hombrew DGPS will no longer be needed.

>  
> ----- Original Message -----

>  
> > > The answer is  
> > > local coordination of ID's. Adding another ID code in the to call does  
> > > nothing to solve the problem.

> >  
> > And who would do this? I thought these ID's were assigned by the Coast  
> > Guard.  
>  
>  
>  
> ---  
> You are currently subscribed to aprsspec as: asadowski@ncshp.org  
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---  
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---

## 18. [aprsspec] RE: dGPS

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 03 Apr 2000 18:29:32 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75275-2000.04.03-17.28.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
Steve Dimse wrote:

> On 4/3/00 5:53 PM Jeff King (jeff@aerodata.net) wrote:  
>  
> >This is why I earlier stated that I thought the APRS-WG shouldn't touch this.  
> >No need to deal with it as its already been delt with.  
> >  
> I agree. The ID's are coordinated by the CG, but I very much doubt they  
> will be giving them out to hams. The idea is just to pick a number  
> different from that which everyone else is using. Since there is no  
> crossover between the APRS DGPS transmitters and the CG ones, there  
> should not be any problem...

The operative word here is "not yet". Your well aware that it would be a trivial matter to port the DGPS-IP over to APRS. Hence, one should not go on the assumption one will never see the CG transmitters data stream on APRS frequencies.

I don't think its that big of a deal in any case.

-Jeff

---  
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## 19. [aprsspec] RE: dGPS

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 03 Apr 2000 18:34:40 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75276-2000.04.03-17.33.42--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
Steve Sampson wrote:

> The Coast Guard only handles Coast Guard stuff, they don't  
> have the manpower to handle every frequency someone puts  
> two or more DGPS's on.

Exactly. But my point was you don't want to go randomly assigning them without some knowledge of what has already been assigned.

> I do think the whole DGPS issue is going to go away in a few  
> years, as the Coast Guard fills all the gaps with its 300 kHz  
> stations. Hombrew DGPS will no longer be needed.

I believe the point of APRS DGPS is the data shares the same radio channel and/or technology. I.E. A VHF channel. The ham doesn't need to purchase a \$300+ DGPS reciever/antenna combo. With the TAPR DGPS all a end user needs to do is wire the RTCM input to the TNC out.

The fact that we will have good coverage of Coast Guard stations won't change the obvious economic advantage of this solution.

-Jeff

---

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---

## 20. [aprsspec] RE: dGPS

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 03 Apr 2000 18:44:41 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75279-2000.04.03-17.43.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

"Sadowski, Allan" wrote:

> Let us NOT get in the US concentric mode too far... think the  
> WORLD view... for areas not covered by USCG...  
>  
> ALOHA  
> AH6LS

The longwave "USCG DGPS" systems coverage actually is worldwide. See:

<http://www.csi-dgps.com/dgps/maps/world.htm>

Kinda makes you wonder why they even bother with S/A...

-Jeff

---

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---

## 21. [aprsspec] RE: dGPS

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 3 Apr 2000 19:17:39 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "'APRS Spec Discussion List'" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75286-2000.04.03-18.18.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

But why not just filter on the FROM CALL? It seems FROM CALL is unique  
and so the probelm is solved...

bob

On Tue, 4 Apr 2000, Darryl Smith wrote:

> G'Day  
>  
> To explain further, the way that dGPS works is that there is a 'STATION ID'  
> encoded in the dGPS data. This is a number from 0 to 1023. If the data from  
> two dGPS stations using the same 'STATION ID' at different locations is sent  
> to a single GPS the results could lead to bizzare and very incorrect  
> results.  
>  
> Whay I am suggesting is that  
> a) we encode the 'STATION ID' as part of the TO callsign e.g. dG0073 for  
> StationID 0073. dG1023 for Station 1023 etc. This would allow users to  
> easally filter the data based on callsign rather than the content of the  
> data which would be nasty if you were wanting to do it in PC software (one  
> more area of bugs) or a PIC for teh GARMIN RTCM Rx Packet problem...  
> b) But we would need to make sure that all users used a different STATION  
> ID... Simple way would be to suggest a number based on a HASH of the  
> callsign... Or at least encourage random numbers.  
>  
> I believe there is some software in 'C' being releast at some stage for MOT  
> to RTCM conversions so we may as well get this issue sorted now.... Also I  
> have during testing been feeding dGPS to the iGATE...  
>  
> Darryl  
>  
> -----  
> Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia

> Mobile Number 0412 929 634 [+61 4 12 929 634 International]  
 > Darryl@radio-active.net.au | www.radio-active.net.au for domain names  
 >  
 >  
 > -----Original Message-----  
 > From: Bob Bruninga [mailto:bruninga@nadn.navy.mil]  
 > Sent: Monday, April 03, 2000 11:14  
 > To: Darryl Smith  
 > Cc: APRS Spec Discussion List  
 > Subject: Re: [aprsspec] dGPS  
 >  
 >  
 > On Mon, 3 Apr 2000, Darryl Smith wrote:  
 >  
 > > It has just been suggested to me that the TO callsign for dGPS  
 > transmissions  
 > > should not be dGPS but dGPSxxxx (or how ever many characters is allowed by  
 > > the TNC) with the xxxx being the station ID of the dGPS station. Also in  
 > Ham  
 > > Radio maybe we should be coordinating dGPS station ID's and recording them  
 > > somewhere centrally (like on the iGATE database)...  
 >  
 > Can you explain further? The full callsign of the DGPS station is in the  
 > FROM field. So I guess I dont see why it needs to be in the TO field too?  
 > But if there is a need, let us know...  
 >  
 > Bob  
 >  
 >

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
 US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
 See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
 See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
 See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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## 22. [aprsspec] RE: dGPS

From: "Curt Mills, WE7U" <[hacker@tc.fluke.com](mailto:hacker@tc.fluke.com)>  
 Date: Mon, 3 Apr 2000 16:59:22 -0700 (PDT)  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Message-ID: <LYR11589-75316-2000.04.03-18.59.38--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

On Mon, 3 Apr 2000, Jeff King wrote:

> The operative word here is "not yet". Your well aware that it would be a  
 > trivial matter to port the DGPS-IP over to APRS. Hence, one should not go  
 > on the assumption one will never see the CG transmitters data stream on  
 > APRS frequencies.

Very slightly off-topic:

If all you want is to DGPS-correct the local GPS and not to rebroadcast  
 the DGPS stuff over amateur frequencies, you can do that now with "gpsd"  
 and "Xastir" on Linux and perhaps other Unix-based OS'es.

:-)

Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
 Senior Methods Engineer/SysAdmin  
 "Lotto: A tax on people who are bad at math." -- unknown  
 "Windows: Microsoft's tax on computer illiterates." -- WE7U

---

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## 23. [aprsspec] RE: dGPS

From: Steve Dimse <k4hg@tapr.org>  
Date: Mon, 3 Apr 2000 20:38:37 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75342-2000.04.03-19.38.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/3/00 6:29 PM Jeff King (jeff@aerodata.net) wrote:

>The operative word here is "not yet". Your well aware that it would be a  
>trivial matter to port the DGPS-IP over to APRS. Hence, one should not go  
>on the assumption one will never see the CG transmitters data stream on  
>APRS frequencies.

>  
Ahh, but that would probably be against FCC rules.

-----  
97.113

(e) No station shall retransmit programs or signals emanating from any type of radio station other than an amateur station, except propagation and weather forecast information intended for use by the general public and originated from United States Government stations and communications, including incidental music, originating on United States Government frequencies between a space shuttle and its associated Earth stations. Prior approval for shuttle retransmissions must be obtained from the National Aeronautics and Space Administration. Such retransmissions must be for the exclusive use of amateur operators. Propagation, weather forecasts, and shuttle retransmissions may not be conducted on a regular basis, but only occasionally, as an incident of normal amateur radio communications.

-----

I suppose you could argue this, saying that part of the error that dGPS corrects is propagation error, but I personally would have a hard time saying that with a straight face...

It is interesting that it would be quite legal to retransmit a dGPS broadcast from the internet, as long as it was sent directly to the internet and not through a radio first. On the other hand, it would seem to be illegal for me to use MacAPRS to send a message through an IGate on my new laptop, which uses an 11 Mbs Airport link. The signals are on 2.4 GHz, so technically IGating a message is the retransmission of a 2.4 GHz Part 15 transmission.

Amazing how rules that were once concise and unambiguous get left in the dust of technologic progress!

Steve K4HG

---

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## 24. [aprsspec] RE: dGPS

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 03 Apr 2000 22:01:50 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75351-2000.04.03-21.01.05--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Dimse wrote:

> On 4/3/00 6:29 PM Jeff King (jeff@aerodata.net) wrote:

>  
> >The operative word here is "not yet". Your well aware that it would be a  
> >trivial matter to port the DGPS-IP over to APRS. Hence, one should not go  
> >on the assumption one will never see the CG transmitters data stream on  
> >APRS frequencies.

> >  
> Ahh, but that would probably be against FCC rules.

Maybe, but not really relevant with regards to this discussion. Also, note the discussion started with (I think) a Australian ham, who of course is not bound by FCC rules.

I let people make their own decision with regards to the rules.

> -----  
> 97.113(e)



> -----  
>  
> I suppose you could argue this, saying that part of the error that dGPS  
> corrects is propagation error, but I personally would have a hard time  
> saying that with a straight face...

Last time I looked, Ionospheric delay (which DGPS corrects) is  
propagation error. Also corrects atmospheric delay (I think they call  
that slant angle? Gerry?).

> It is interesting that it would be quite legal to retransmit a dGPS  
> broadcast from the internet, as long as it was sent directly to the  
> internet and not through a radio first.

Impossible to determine this.... I mean, if it goes through one microwave or SAT  
telco link its "radio". I take this rule as having the radio receiver and transmitter at  
the same site directly hooked together. Hence, a non issue. Also, if you reformat  
the data (which you are), are you really rebroadcasting it? To fuzzy, FCC won't  
waste there time prosecuting you unless your really crossing the line. Get your  
own legal opinion, but I'd not worry much about it.

> Amazing how rules that were once concise and unambiguous get left in the  
> dust of technologic progress!

Yeap, the moral of the story is have a good attorney on retainer and always act  
in good faith. I don't spend alot of time overanalyzing the rules, but look at the  
intent. Things simply are moving to fast.

-Jeff wb8wka

---

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## 25. [aprsspec] RE: dGPS

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Mon, 3 Apr 2000 22:04:49 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-75357-2000.04.03-22.06.11--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-75357-2000.04.03-22.06.11--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

It's surprising how much you can do without a national organization!  
(OK, OK, I'm just kidding...)

Part-15 SS, the only way to go! Part-97 rules are completely bogus  
above 30 MHz. Only a relay league could cherish the product...

I run a 5 mile 2.4 GHz link between myself and a friend. I'm thinking  
of using it to run a split repeater site on 2 m. Putting together another  
5 mile link to the ISP. I've got these down to about \$650 a node, or  
\$1k per back-to-back link (\$450 per 500 mW bridge, \$100 for  
Radio Shack tri-pod and mast). "Only" 1.6 Mbps though.

I can see the time rapidly approaching where mobile emitters at  
2.4 GHz would be possible in many cities with a central node. All of  
the imposed APRS hacks to work at 1.2 kbps would seem quaint :-)

Steve, k5okc  
<http://www.usa-site.net/~ssampson/radio>

----- Original Message -----

[snip]

> Amazing how rules that were once concise and unambiguous get left in the  
> dust of technologic progress!  
>  
> Steve K4HG

---

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## 26. [aprsspec] RE: dGPS

From: "Sadowski, Allan" <allan.sadowski@ncshp.org>  
Date: Tue, 4 Apr 2000 07:26:52 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75394-2000.04.04-06.26.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> After looking at the ref USCG pic.... I reiterate... USCG is DEFINITELY a  
> US concentric  
> system and it doesnt even cover large parts of the US.... nor the major  
> shipping transit  
> areas between US territories... though that's not as important...  
> Looking at the map  
> its clear that the Caribbean.. and Med... heck.. LOTS of areas where I'd  
> love to have  
> dGPS... are not going to be covered in any plan... the VLF DGPS  
> correction info (as I  
> understand the system) is satellite correction data for those satellites  
> in view of the area  
> local to a particular beacon (as the pic clearly shows)... though many US  
> and European  
> areas do have continuous coverage (due to a large number of DGPS  
> beacons)... most  
> of this planet isn't now covered.. nor will it ever be... No way a  
> beacon 600 miles from  
> me is gonna do me any good... the satellites seen at that location differ  
> from what I see  
> at my location... and the beacon doesn't propagate that far anyway...  
>  
> ALOHA  
> AH6LS  
>  
Stupid thought.. but wouldn't it be better to TURN OFF SA... so nobody  
develops  
a workaround.... then when you needed to juke up the system turn on SA...  
seems  
I'd be a much simpler approach... though it'd be worthless in a "Pearl  
Harbor"  
scenario - i.e. surprise attack... like I said.. stupid thought....

SNIP....

> The longwave "USCG DGPS" systems coverage actually is worldwide. See:  
>  
> <http://www.csi-dgps.com/dgps/maps/world.htm>  
>  
>

---

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## 27. [aprsspec] RE: dGPS

From: Jeff King <jeff@aerodata.net>  
Date: Tue, 04 Apr 2000 11:14:47 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-75415-2000.04.04-10.14.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

"Sadowski, Allan" wrote:

> Jeff  
>  
> After looking at the ref USCG pic.... I reiterate... USCG is DEFINITELY a US  
> concentric  
> system and it doesnt even cover large parts of the US.... nor the major  
> shipping transit  
> areas between US territories... though that's not as important...

To clarify, I thought your use of "US concentric" meant it was only a U.S. territorial  
DGPS system. Its been adopted over a large part of the world. As to coverage, well that's  
up to each individual area to do on their own.

-Jeff

> > The longwave "USCG DGPS" systems coverage actually is worldwide. See:  
> >  
> > <http://www.csi-dgps.com/dgps/maps/world.htm>

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## 28. [aprsspec] RE: aprsspec digest: April 04, 2000

From: "Darryl Smith" <[darryl@radio-active.net.au](mailto:darryl@radio-active.net.au)>  
Date: Wed, 5 Apr 2000 19:03:09 +1000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-75564-2000.04.05-04.09.03--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-75564-2000.04.05-04.09.03--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

G'Day

>> After looking at the ref USCG pic.... I reiterate... USCG is DEFINITELY a  
US  
>> concentric  
>> system and it doesnt even cover large parts of the US.... nor the major  
>> shipping transit  
>> areas between US territories... though that's not as important...  
>  
>To clarify, I thought your use of "US concentric" meant it was only a U.S.  
territorial  
>DGPS system. Its been adopted over a large part of the world. As to  
coverage, well that's  
>up to each individual area to do on their own.

Well, us people in the newer ex-british colonies are sort of disadvantaged  
when it comes to dGPS infrastructure... Whereas the USA has probably 100  
stations, Australia has less than 10 operational stations, for a country  
about the same size, with more coast line.... I personally would call it  
northern-hemisphere-centric myself... It looks like 90% of stations are in  
the north, and most are in the west.... So us poor people in the  
south-eastern quadrant are left out :-)

Darryl

-----

Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia  
Mobile Number 0412 929 634 [+61 4 12 929 634 International]  
[Darryl@radio-active.net.au](mailto:Darryl@radio-active.net.au) | [www.radio-active.net.au](http://www.radio-active.net.au) for domain names

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---

## 29. [aprsspec] RE: aprsspec digest: April 04, 2000

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Wed, 05 Apr 2000 11:44:18 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-75602-2000.04.05-10.44.28--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-75602-2000.04.05-10.44.28--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Darryl Smith wrote:

>  
> >To clarify, I thought your use of "US concentric" meant it was only a U.S.  
> territorial  
> >DGPS system. Its been adopted over a large part of the world. As to  
> coverage, well that's  
> >up to each individual area to do on their own.  
>  
> Well, us people in the newer ex-british colonies are sort of disadvantaged  
> when it comes to dGPS infrastructure... Whereas the USA has probably 100  
> stations, Australia has less than 10 operational stations, for a country  
> about the same size, with more coast line.... I personally would call it  
> northern-hemisphere-centric myself... It looks like 90% of stations are in  
> the north, and most are in the west.... So us poor people in the  
> south-eastern quadrant are left out :-)

My point continues to be lost...

It is not up to the U.S. to finance DGPS stations throughout the world... fact of the matter is,  
most of the world is freeloading off the present U.S. owned GPS satellites.

My point was that the "U.S. Coast Guard longwave MSK type DGPS system" works many  
places in the world with the same receiver. I can take my CSI SBX-2 DGPS receiver board,

and have it work on the Detroit MI USA DGPS station OR one of the stations in Australia with no intervention on my part.

Hence, I don't consider the DGPS system in question to be "US concentric" at all. Even if it were, I think some consideration needs to be made regarding who invested the millions of dollars to make it work.

Now directly addressing your problem, have you considered setting up your own MSK DGPS station(s)? In the U.S. we have a license free band from 160khz-190khz that I used to play around with alot in my younger days. Building a transmitter for that range (well 200-350 in the case of DGPS) is not that hard. Couple that with the TAPR DGPS board and a little extra firmware and I think you'd have the makings of a DGPS station. Now with the apparent lack of DGPS coverage in Australia, I'd think your radio authorities might be a bit liberal in assigning experimental licenses for you.

Seems like a good cause for a ham club.... might even get some funding from the government to offset you expenses. Make them solar powered, maybe 10 watts or so transmitters, 50 foot helical loaded antennas.... should give maybe a 10 mile range or so.... or go higher in power if you have commercial mains available and/or bigger antenna.

BTW, WAIS is presently being tested now.... not sure if Australia is in the footprint, but this maybe the reason for the lack of longwave DGPS stations..... they won't be as needed in the future.

73

Jeff

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### 30. [aprsspec] ? SSID Path implementation.

From: "Marco Savegnago" <m-save@tin.it>  
Date: Sat, 8 Apr 2000 13:59:4  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76170-2000.04.08-13.59.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, I'm trying to understand the SSID Path routing method as implemented in the TM-D700.

There is not any digipeater in my area that implement the SSID Path method for routing the UI frame with another firmware, I never found in the APRS protocol specification how the method work exactly, and I want to be sure that my observation is correct and this is how the protocol must be implemented.

First the SSID Path routine in the D700 must be enable with the command UISSID and digipeater ON.

I've observed that when UISSID is ON the digipeater repeat all the UI frame addressed to ANY CALL with SSID > 0 (not only the mycall or other generic call) and repeat as follow:

>From SSID > 0 and SSID < 8

The frame will be repeated with the SSID of destination decremented by one and the call of the digipeater will be put in the via list.

Example:

A frame like this (MYCALL is IW3FQG and UNPROTO is APRS-6):

IW3FQG>APRS-7:

will be repeated to:

IW3FQG>APRS-6, DIGI\*:

With SSID > 8 the translation rules is different because there is the direction rule.

If SSID is equal to 8 (North direction)

If the digipeater listen an UI frame addressed to ANY call with ssid = 8 it repeat the frame, put the SSID of destination to zero, put the digipeater callsign in the via list and attach to this if

available the path for North direction (NPATH parameter in D700).

Example:

A frame like this (MYCALL is IW3FQG and UNPROTO is APRS-8, NPATH in the digi is set to NORTH):

IW3FQG>APRS-8:

will be repeated to:

IW3FQG>APRS,DIGI\*,NORTH:

If SSID is equal to 12 (North direction)

If the digipeater listen an UI frame addressed to ANY call with ssid = 12 it repeat the frame, put the SSID of destination the same as received, put the digipeater callsign in the via list and attach to this if available the path for North direction (NPATH parameter in D700).

Example:

A frame like this (MYCALL is IW3FQG and UNPROTO is APRS-12, NPATH in the digi is set to NORTH):

IW3FQG>APRS-12:

will be repeated to:

IW3FQG>APRS-12,DIGI\*,NORTH:

The same rule is valid for South (SSID 9,13) East (10, 14) and West (11, 15).

I've observed that in all cases if the frame is sent with a digipeater the via path (es: APRS-8 VIA DIGI) the frame is not repeated.

IW3FQG>APRS-8,DIGI:

Is not repeated by the digipeater.

Do you know if all these rules are correct?

Thanks in advance.

Marco IW3FQG

msave@tin.it

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### 31. [aprsspec] APRS Version 2.0, the "vision thing"

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sat, 08 Apr 2000 17:30:48 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-76200-2000.04.08-16.31.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi all:

I think a limited set of goals are outlined for APRS version 1.0, but the world has changed substantially since APRS was conceived.

It might be worthwhile to consider the "vision" of APRS before proceeding on to version 2.0. Vision in the sense of seeing the future direction of the world, and setting some specific goals here.

It would be helpful here to have some discussion from members of the APRS-WG, who with one exception, have not participated very much in an open forum discussing the future of amateur AVL.

I've got a few things to through out, while not goals, might get things started with

APRS version 2.0. Lots of this has already been discussed here.

1. Backwards compatibility should not be a major issue.
2. Reduce the number of protocols... I think there are 4 or 5 ways to say the same thing now. Maybe just standardize on compressed format or something.
3. What is the purpose of APRS? List a bullet sheet in decreasing order of importance. This will be useful in making decisions as a weighting factor.
4. Have extensions for balloons/sats to accommodate there increased height/speed \*accurately\* while not overly impacting terrestrial operations (maybe a 16 bit field for balloons/sats where as terrestrial only requires 8 bit)
5. Adopt or suggest a broadcast protocol on different frequencies. Maybe adopt the PACSAT method for this.
6. Come up with a "official" slotted protocol for all GPS equipped trackers
7. Adopt a "APRS time protocol" be it internet based or over the air based.
8. Do we really need AX.25? At least redefine the APRS protocol so it is transport method independent.
9. Consider the big picture. How can the APRS model be made attractive to other users within amateur radio, such as DX cluster, weather, convers, etc. Any "one to many" type use.

I'm sure there is more, but first and foremost we need to get a idea of the Vision... what are we trying to accomplish? What is most important and what is least important? How is the world and amateur radio changing? How could APRS/AAVL be made more attractive to power users?

I'd like to see what people think, in particular the members of the APRS-WG.

Thanks

Jeff

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## 32. [aprsspec] Re: [aprssig] Re: IGate placement

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sat, 08 Apr 2000 18:35:18 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>, APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-76211-2000.04.08-17.37.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve:

Steve Dimse wrote:

> Well, many IGates have minimal RF capabilities, and do not have a high  
> altitude. Even so, I'd be hard pressed to call 2 hops a long path, but  
> that is just semantics, it really doesn't matter.

2 hops through 1000 foot digi's in urban areas when a I-gate is 0 hops away is to long of a path. Conversely, 5 hops in a rural area to get to the closet I-gate is OK. One has to be pragmatic here, better yet the software should do it for one. The point is every station, and I-gate has DIFFERENT RF capabilities. There is no standard amateur station. Hence the smart software should deal with these issues.

And yes, IT DOES MATTER. Read some of the packet radio papers/books I cited earlier.

> >I'll try and find Tom Clark's and Bob's article on the subject if you  
> >promise me you'll  
> >read it. I think Tom's was in a early PSR.  
> >  
> Don't bother, I really don't have time. Please understand, I'm not saying  
> these are bad ideas, or wrong ideas. This is just not something that  
> interests me enough to spend my precious time on.

Oh, so the "radio" side of packet radio doesn't interest you? Hmmmm.....  
Certainly your choice to ignore this stuff, but as you can see, many people hold your words in godlike esteem. Understand the power that this holds and weigh what you say with what you know to be true. I DO NOT fault you for this, but you'd be amazed at the amount of private hate mail I get supporting you whenever I question you on these types of issues. Yet you say these same issues don't interest you.... Life ain't fair, is it?

> Perhaps I wasn't specific enough in what I was asking, allow me to  
> rephrase:  
>  
> Is anyone actually working on implementing these ideas in a working  
> system for APRS users? This was the question I really am interested in.

And perhaps I wasn't specific enough. YOU (and others) are working on these sort of things.... you just don't know it. It would be trivial (in some cases) to adopt the prior art I am pointing out to you. That's why I am posting this stuff here.... in the hopes those that already "have the wheel" can adopt them. I just don't see the need to completely re-invent the wheel here for what is simply good amateur practice.... yet increasingly it is becoming apparent to me that is what is needed.

It simply would be much easier to do this within the system as opposed to completely scrapping the system we have and starting over. This is why I continually nudge you and other APRS leaders to adopt best practices of other packet radio amateur radio groups.... be they U.S. packet hams of 10 years ago or the Europeans today. We simply don't need to keep placing our hand on the stove to realize its hot.

My interest really is to improve the system and not to throw rocks at programmers or the APRS-WG, as you seemed to imply in the close of your last message. But if people are closed minded, or unwilling to discuss these issue in an open forum, I'm sure it could come off looking like that. But if you really knew me, you'd know my intent was positive.

But to more directly address your question, yes, I know of one party experimenting with APRServe RF data broadcasting. It is up to them to disclose it to you which I'm sure they will if and when they are successful. The other items WOULD require cooperation within the APRS community to implement, and hence I know of no-one doing them. To paraphrase your comment of "build it and they will come", simply cannot be the case without some corporation within the community, in particular when we are discussing networking issues and/or smart software. These things really need to be addressed more formally, something I'm suggesting be done.

> At some point though I had to say enough, pick a set of tools, and Just  
> Do It.

I believe the first sentence of my earlier posting said this was future food for thought. Its up to each person to open their mind to others ideas.

> If APRS were a commercial system generating millions of dollars a year,  
> then there could be a core of hired programmers that did what they were  
> told. In a world like this, it is easy to turn vision into function.

Hmmm.....the business model of Linux keeps coming to mind. This also tells me that more often then not, we are are own worst enemy. Many "hobby" or open source things rival or exceed the commercial world. For all the supposed "warts" of APRS, it really DOES rival some things in the commercial world..... in particular YOUR stuff.

Don't sell yourself short....

-Jeff

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### 33. [aprsspec] Re: [aprrsig] Re: IGate placement

From: David VanHorn <dvanhorn@cedar.net>  
Date: Sat, 08 Apr 2000 17:56:32 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprrsig@lists.tapr.org>,  
APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76216-2000.04.08-18.04.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
-----BEGIN PGP SIGNED MESSAGE-----  
Hash: SHA1

>2 hops through 1000 foot digi's in urban areas when a I-gate is 0 hops  
>away is to long of a path. Conversely, 5 hops in a rural area to get to  
>the closet I-gate is OK. One has to be pragmatic here, better yet the  
>software should do it for one. The point is every station, and I-gate  
>has DIFFERENT RF capabilities. There is no standard amateur  
>station. Hence the smart software should deal with these issues.

This may be obvious to some, but it seems to me that what we're not saying  
in the digi path is what we are trying to do. IOW, We're telling the  
system what to do, not letting the system decide how to accomplish a goal  
within the local environment.

-----BEGIN PGP SIGNATURE-----

Version: PGPfreeware 6.5.2 for non-commercial use <<http://www.pgp.com>>

iQA/AwUB00/VQIF1GDz116VWEQJeKwCeKH9S3v1E4fCMc7ISFS0k712x408AoJXu

vGBSfghE01vdWq8p53g0nD3b

=oBgf

-----END PGP SIGNATURE-----

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### 34. [aprsspec] Re: IGate placement

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>

Date: Sat, 8 Apr 2000 21:13:44 -0500

To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <LYR11589-76236-2000.04.08-21.13.43--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

> Certainly your choice to ignore this stuff, but as you can see, many  
> people hold your words in godlike esteem.

I don't think that's possible in Ham radio :-) The "rasberry" seems to  
predominate most communication.

I think one of the responsibilities of a digi owner is to moderate the  
data onto a fixed/limited bandwidth. It really is an individual Ham  
responsibility, but we shouldn't depend on that. There is enough  
tools in a digi to force moderation.

While I don't think you will be able to get any of the APRS authors  
to take on any tasking or personal ideas; what you are proposing is  
something that would make a great theoretical paper, or even a  
scientific study. One that may even be adopted. That's where I  
would recommend that you use your energy.

Best Regards,  
Steve/k5okc

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### 35. [aprsspec] Re: [aprssig] Re: IGate placement

From: Steve Dimse K4HG <[k4hg@aprs.net](mailto:k4hg@aprs.net)>

Date: Sat, 8 Apr 2000 22:35:17 -0400

To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <LYR11589-76237-2000.04.08-21.36.00--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

On 4/8/00 6:35 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:

>  
>> >I'll try and find Tom Clark's and Bob's article on the subject if you  
>> >promise me you'll  
>> >read it. I think Tom's was in a early PSR.  
>> >  
>> Don't bother, I really don't have time. Please understand, I'm not saying  
>> these are bad ideas, or wrong ideas. This is just not something that  
>> interests me enough to spend my precious time on.  
>



>Oh, so the "radio" side of packet radio doesn't interest you? Hmmmm.....  
>Certainly your choice to ignore this stuff, but as you can see, many  
>people hold your words in godlike esteem. Understand the power that this  
>holds  
>and weigh what you say with what you know to be true. I DO NOT fault you  
>for this, but you'd be amazed at the amount of private hate mail I get  
>supporting  
>you whenever I question you on these types of issues. Yet you say these  
>same issues don't interest you.... Life ain't fair, is it?  
>

It is not my desire to be a god. If I were, I would know everything about everything, and with nothing left to learn, I'd probably be bored. One could only spend so much time looking into Cameron Diaz's bedroom... My statement was not that the issue was insignificant, or that I didn't care at all. The statement was that the issue didn't interest me enough to dig into the subject. I've learned I can't learn everything, I have to limit my involvement in some areas in order to achieve the results I want in others.

Today I did not say that these were bad or unworthy ideas, or belittle them in any way. To save you the trouble of digging through messages, in the past, when I have voiced opposition to such proposals, it has generally been because my opinion is that such a networking scheme would be time-consuming to develop, expensive to deploy, and not result in enough benefit to the average ham to make them want to participate. I expressed those thoughts as my personal opinions and did my best to argue those points, but failed to convince you. I am no longer arguing these points, because to continue to debate is unproductive...I will never convince you, and to debate further would mean I would have to learn more about the subject, see the previous paragraph.

Anyway, I would, honest and truly, rather see you prove me wrong by developing a better system, than to convince you it cannot be done.

>It simply would be much easier to do this within the system as opposed  
>to completely scrapping the system we have and starting over. This is  
>why I continually nudge you and other APRS leaders to adopt best practices  
>of other packet radio amateur radio groups..... be they U.S. packet hams  
>of 10 years ago or the Europeans today. We simply don't need to keep  
>placing our hand on the stove to realize its hot.  
>

OK, but again, what is needed is concrete examples, not references to 10 year old papers. Develop a real protocol that implements these ideas, and present it. The test system need be nothing more than a couple ht digis and a few mobiles. No general concepts, vague references, or volunteering of other's labor. Results!

>> If APRS were a commercial system generating millions of dollars a year,  
>> then there could be a core of hired programmers that did what they were  
>> told. In a world like this, it is easy to turn vision into function.  
>

>Hmmm.....the business model of Linux keeps coming to mind. This  
>also tells me that more often than not, we are our own worst enemy.  
>

"The business model of Linux"? A handful of people with business savvy, smart enough to not alienate the open source community with promises and a few IPO shares, smart enough to ride the crest of anti-Microsoft sentiments, smart enough to con Wall Street into valuing companies that have never made a penny of profit in the billions, and finally, on their knees every night praying that the .com bubble doesn't burst before their lockout period ends.

Perhaps the Linux open source community is the example you wish to put forward. A group of people who code for the sheer joy of it, without worrying about the financial aspects, and producing a superior product. That's great, I'm all in favor (with actions and not just words), but there is a big difference between the Linux world and the APRS world. In Linux, the programmers are the consumers, while in APRS the programmers are a distinct minority. And even in Linux, many good projects wither and die due to a lack of participation.

There are simply too few programmers in APRS to produce the critical mass that Linux has achieved. Look at aprsd...the source has been available for well over a year. How many people have contributed? What about xastir? I keep meaning to ask Frank if anyone has joined him on the project. (You there Frank?) Dozens of people were clamoring for an open source client, but once one was released they seemed to just blend into the woodwork. Most of them really wanted a free client, not an open source one. Even the Pic-E...several hundred have sold, but only a couple

people have released new programs for it.

I say the answer to making the APRS community more Linux-like is to develop new talent, not to try to direct the efforts of those already contributing. I try very hard to encourage people to join in the fun, they do not know what they are missing.

>Many "hobby" or open source things rival or exceed the commercial world.  
>For all the supposed "warts" of APRS, it really DOES rival some things  
>in the commercial world..... in particular YOUR stuff.  
>  
>Don't sell yourself short....  
>  
I'm not selling myself at all ;-)

The difference between hobby and commercial environment is not in the quality, and I never said or implied that APRS was in any way second rate to commercial systems. The difference is in the motivation of the programmers. I think we'd agree that love is a better motivator than money when it comes to coding. You have to love what you are working on to do an outstanding job, and that means the freedom to work on what interests you, not what interests other people.

Steve K4HG

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### 36. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 8 Apr 2000 22:46:43 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-76239-2000.04.08-21.47.50--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-76239-2000.04.08-21.47.50--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sat, 8 Apr 2000, Jeff King wrote:

> It might be worthwhile to consider the "vision" of APRS before proceeding on  
> to version 2.0.  
>  
> 1. Backwards compatibility should not be a major issue.

Then you probably need to plan on using a different frequency than  
144.39...

Bob

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### 37. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Sat, 8 Apr 2000 22:21:44 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-76247-2000.04.08-22.22.03--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-76247-2000.04.08-22.22.03--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> 8. Do we really need AX.25? At least redefine the APRS protocol so it is  
transport  
> method independent.

The obvious transport protocol would be TCP/IP, with probably UDP as the datagram protocol. I think as long as you replace the Ethernet data-link layer with something relevant to Hams; such as AX.25, or any callsign based substitution of source and destination addresses, the result would be an instant winner.

Given UDP, it would simplify some of the low level programming, as most OOP languages have a UDP object already, and it is a standard protocol. There are even various compression classes ready made.

This would also facilitate a cryptographically strong authentication, as it is quite easy to spoof, or steal/modify an APRS object currently.

The two books on my Ham desk are by Elliotte Rusty Harold, and published by O'Reilly: Java Network Programming, and Java I/O. The network one is three years old now, and becoming obsolete, but both provide enough information to just about plug and play any transport mechanism your heart desires :-). I'm sure C++ Builder or Visual Basic is similarly feature rich. The bad ole C days are over. No more grow your own...

Best Regards,  
Steve/k5okc

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### 38. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sat, 08 Apr 2000 23:43:24 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-76252-2000.04.08-22.45.08--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-76252-2000.04.08-22.45.08--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Steve Sampson wrote:

> > 8. Do we really need AX.25? At least redefine the APRS protocol so it is  
> transport  
> method independent.  
>  
> The obvious transport protocol would be TCP/IP,

No, not at all. Remember, this is going over the air on a data limited channel. The less overhead the better.... I think a tcp/ip frame has at least 40 bytes in overhead.... if this was the only choice, I would stick with ax.25.

Or possibly are you suggesting pure IP over the air? There was a driver for NOS that allowed you to do this.

I was thinking something a little more micro controller friendly and more tailored to the data at hand. tcp/ip is a real challenge on a little microcontroller, although maybe we shouldn't be too worried about this?

But we are getting into specifics, I was more interested in what people want to do with AAVL. The specifics can come later.

For example, what are the primary uses of amateur avl/APRS? AVL, chit chatting, sending beacons, sending messages. If you know the order of importance here, you can use these items to help decide issues relating to the protocol.

> This would also facilitate a cryptographically strong authentication, as it is  
> quite  
> easy to spoof, or steal/modify an APRS object currently.

This actually is quite a good idea. I think as APRS extends out past the ham market into the hacker market, people will appreciate these things more.

73

-Jeff

---

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### 39. [aprsspec] Re: [aprssig] Re: IGate placement

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Sat, 8 Apr 2000 22:45:56 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-76253-2000.04.08-22.45.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-76253-2000.04.08-22.45.44--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

"Steve Dimse K4HG" wrote:

[snip many excellent points]

> There are simply too few programmers in APRS to produce the critical mass  
> that Linux has achieved. Look at aprsd...the source has been available  
> for well over a year. How many people have contributed? What about  
> xastir? I keep meaning to ask Frank if anyone has joined him on the  
> project. (You there Frank?) Dozens of people were clamoring for an open  
> source client, but once one was released they seemed to just blend into  
> the woodwork.

Open Source to me, as a minimum, has a CVS or like based method of making changes. If you must rely on the original author to fold in your changes, it becomes unwieldy. For example, I tried to submit some changes to xastir that would allow it to work with a non-linux system, but after two upgrades none of the code was used. I just assumed that the author wasn't interested, and I moved on. I did look into the possibility of developing the program in my own way, but having spent some time in X windows applications development, and Linux uses the ancient 1.0 Motif, you have to compare that to Visual Basic or Java as to where you want to go in life.

> Most of them really wanted a free client, not an open  
> source one. Even the Pic-E...several hundred have sold, but only a couple  
> people have released new programs for it.

Most bought it to transport their GPS NMEA information. There really is a limited application for these. What are you expecting would develop? Cruise control interfaces? Maybe a city wide police radar detector emitter/dBm display... :-)

> I say the answer to making the APRS community more Linux-like is to  
> develop new talent, not to try to direct the efforts of those already  
> contributing.

Well put. If you can't program, you can at least do basic research and publish something that others can enjoy. OK, I'll be quiet again now...

Best regards,  
Steve/k5okc

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## 40. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sat, 08 Apr 2000 23:45:56 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-76255-2000.04.08-22.47.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

> On Sat, 8 Apr 2000, Jeff King wrote:  
>  
> > It might be worthwhile to consider the "vision" of APRS before proceeding on  
> > to version 2.0.  
> >  
> > 1. Backwards compatibility should not be a major issue.  
> >  
> Then you probably need to plan on using a different frequency than  
> 144.39...

Thats not my concern.

I'd actually rather hear from you what you think APRS should be... what is your "vision" for it.... its evolution. This would frame any discussions of APRS version 2.0 even better than specifics..

Thanks

-Jeff

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#### 41. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: "Steve Sampson" <ssampson@usa-site.net>  
Date: Sat, 8 Apr 2000 22:54:55 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76256-2000.04.08-22.55.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
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40 bytes sounds like a lot at 1.2 kbps, doesn't really matter  
at 4.8 kbps on up to 1.6 Mbps. We are talking about using  
Proxim Symphony Spread Spectrum in our cars and central  
nodes aren't we? :-)

Best Regards,  
Steve/k5okc

> > The obvious transport protocol would be TCP/IP,  
>  
> No, not at all. Remember, this is going over the air on a data limited  
channel.  
> The less overhead the better..... I think a tcp/ip frame has at least 40 bytes  
in  
> overhead.... if this was the only choice, I would stick with ax.25.

---

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#### 42. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: "Steve Sampson" <ssampson@usa-site.net>  
Date: Sun, 9 Apr 2000 00:28:20 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76278-2000.04.09-00.28.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> > > 1. Backwards compatibility should not be a major issue.  
> >  
> > Then you probably need to plan on using a different frequency than  
> > 144.39...  
>  
> Thats not my concern.

Correct. 144.39 should be considered consumed. At 1.2 kbps there is  
no room for other than minor changes.

Having played a bit with the 4.8 kbps soundcard stuff, I think this is the  
way to go. You don't get into the problems of the G3RUH modem and  
its down to DC requirement, although you still need to bypass the audio  
filters (direct inject, discriminator take-off). This is the speed that most  
Police use in their cruisers for data terminals, for example.

There's a lot of spectrum out there, and no use piling up with experimental  
stuff that may never be as viable.

Best Regards,  
Steve/k5okc

---

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#### 43. [aprsspec] Re: [aprssig] Re: IGate placement

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 09 Apr 2000 02:34:23 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76295-2000.04.09-01.35.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Sampson wrote:

> Well put. If you can't program, you can at least do basic research and  
> publish something that others can enjoy.

Here is something I wrote on the topic in PSR Isusue 56 October 1994:  
"Proposal: A High Speed Multicast-capable Packet System for the 219MHz

Band" by Jeff King WB8WKA (but scales to other bands just as well)

Now, writing is all well and good, but nobody reads the stuff it appears.

Clearly, one must do more than write, one must be a RF expert and a software expert.

-Jeff

---

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#### 44. [aprsspec] Re: [aprssig] Re: IGate placement

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sun, 09 Apr 2000 03:53:48 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>, APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-76306-2000.04.09-02.57.13--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Again, I preface this as food for thought, and not any great desire to debate you.

First, one clarification.

Steve Dimse K4HG wrote:

> Yet you say these  
> >same issues don't interest you.... Life ain't fair, is it?  
> >  
> It is not my desire to be a god.

It may not be, but you have a very high profile position in APRS. People tend to look to you for guidance...like it or not. With that comes some responsibility.

---

Anyways, lets get back to what I was saying, which I'm not sure was as clear as it should have been.

What is at hand required little RF networking knowledge, but a suggestion of "hooks" you could put into FINDU to improve RF messaging delivery at some future date. Hence my prefacing this discussion with "food for thought". I just want you to think about this as you are in the sole position (at this point in time) to implement this. Even if you weren't, your corporation would be helpful.

First the statement of issue.

1. You stated that for various reasons you felt it wise to limit the number of internet gateways.

2. I stated that I felt it better to embrace the internet, and have as many internet gateways as possible, even if they heavily overlapped.

Yet the issues you bring up, management issues, are good ones.

I am suggesting using FINDU to qualify internet gateways. That is, over time, FINDU (or the database) can determine who is on all the time, who has what RF footprint, and who is best able to deliver a message to a particular station. Basically to determine a "weight" in choosing who to IGATE a message to.

While I won't bore you with the technical details, this boils down to something called "least power routing" which is a common industry standard. In the case of hams, least power would boil down to try and reduce the number of digi's in the path. Not only is this good amateur practice, but it also increases the chances of getting a message through.

You target the message to the closet IGATE that has the highest "weighting" factor. This can be partially determined from the observed RF foot print from FINDU receiving as well as some self reporting issues like power and ERP.

Now, back to management issues. All this would be done automatically. The software would chose the best path to the station depending on the weighting information

it evaluated. In this way, your "choice" of the internet gateway would not be based on arbitrary political considerations, but on sound engineering/performance data. If for example, a station wasn't full time, its weighting score would decrease. If a station was one or more digi hops from the messaging station, its weighting would decrease.

The whole point being here to reduce the impact on the frequency and increase the reliability of message delivery.

I realize this might be a bit complicated, but it is perfectly workable. I was just asking you consider some of these issues in your design of "FINDU" so that someday it might be implemented. In programming terms, I was just asking for the "hooks", be it at your site, or remotely, be considered.

Also, other smart routing things might be considered eventually.

While your correct, I've had alot of ideas that go against your idea of what is practical, I don't think this is that outlandish... in particular since I'm just asking you to consider it in your design of FINDU and/or APRSERVE.

That's it. Agree or disagree, I've spoke my piece. A few other things.

-----

> >Hmmm.....the business model of Linux keeps coming to mind. This  
> >also tells me that more often then not, we are are own worst enemy.  
> >  
> "The business model of Linux"?

Nothing to do with IPO's. You misunderstand me. Its how Linux gets done and was in place long before any Linux IPO. Other then that, I think you got it.

> Perhaps the Linux open source community is the example you wish to put  
> forward.

Yes.

> A group of people who code for the sheer joy of it, without  
> worrying about the financial aspects, and producing a superior product.  
> That's great, I'm all in favor (with actions and not just words), but  
> there is a big difference between the Linux world and the APRS world.

Yes, indeed there is.

> In  
> Linux, the programmers are the consumers, while in APRS the programmers  
> are a distinct minority. And even in Linux, many good projects wither and  
> die due to a lack of participation.

You really need to be fair. Up until a year ago, I'm told on the newsgroups, anyone that considered doing a APRS port was threatened with lawsuits (I think you might have been the one saying this). To this date, there is only one open source APRS display application, and its still in Beta (and doing damn well).

> There are simply too few programmers in APRS to produce the critical mass  
> that Linux has achieved.

In the context of the above statement, I consider APRS ONE YEAR OLD as May 1999 was the time the statement was made anyone could develop for APRS. When Linux was one year old, it was more MINUX then LINUX. It was just barely available then. Few even knew it existed.

> Look at aprsd...the source has been available  
> for well over a year. How many people have contributed?

Don't know. Its a specialized application, with only 20-40 people running it so I suspect very few.

> What about  
> xastir?

Judging by the development list, it appears quite a few have contributed. Some real sharp people on that list and the project seems to be moving along real nice. If you not on the development list, it is:

<http://okcforum.org/mailman/listinfo/xastirdev>

> I say the answer to making the APRS community more Linux-like is to

> develop new talent, not to try to direct the efforts of those already  
> contributing.

Yes, but more so collaboration. I help you in areas you are weak, you help me in areas I am weak. And so it goes. I have a itch, I scratch it, that kind of thing. It all builds up. So far, the ONLY one who has adopted the model fully is XASTIR. And clearly it shows.

> I think we'd agree that love is a better motivator than  
> money when it comes to coding. You have to love what you are working on  
> to do an outstanding job, and that means the freedom to work on what  
> interests you, not what interests other people.

I'm sorry I came off that way as I feel the same way you do. If I were to offer a idea up you, I'd rather you say, yes that might be a good idea then to come off trying to dictate what you should do. I don't think your saying you want to work in a vacuum, so if I see a potential better way to do something, how do you suggest I present it? (assuming I'm not capable of implementing it myself)

-Jeff

---

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## 45. [aprsspec] Re: [aprssig] Re: IGate placement

From: Steve Dimse K4HG <k4hg@aprs.net>  
Date: Sun, 9 Apr 2000 05:07:58 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>, "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76314-2000.04.09-04.08.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/9/00 3:53 AM Jeff King (jeff@aerodata.net) wrote:

>1. You stated that for various reasons you felt it wise to limit the number  
>of internet gateways.

>  
In the context of things as they are.

>2. I stated that I felt it better to embrace the internet, and have as many  
>internet gateways as possible, even if they heavily overlapped.

>  
In the context of contemplating an indefinite future.

>I am suggesting using FINDU to qualify internet gateways. That is, over time,  
>FINDU (or the database) can determine who is on all the time, who has what  
>RF footprint, and who is best able to deliver a message to a particular  
>station.

This is not a few hooks, it turns the system on its ear. You propose taking the decision to IGate out of the hands of the individual clients and placing it in a central server.

>Basically to determine a "weight" in choosing who to IGATE a message to.  
>

>While I won't bore you with the technical details, this boils down to  
>something  
>called "least power routing" which is a common industry standard. In the case  
>of hams, least power would boil down to try and reduce the number of digi's  
>in the path. Not only is this good amateur practice, but it also increases

To determine this, you need to do even more modification to the system. The internet feed is heavily filtered of dups. The first one to APRServe gets through. The path of the packets can be different between first.aprs.net and second.aprs.net, each server does its own filtering. Your judging program needs to have access to all the dupes, this simply does not exist within the present system. It also needs to know which IGate recieved each packet, information which is not conveyed in the present system.

Next you need to get the information to an IGate that it is the designated IGate for a packet. You might do this in advance, continually broadcasting messages giving the IGate for each station, or wait for a packet to appear, then modify it with IGate info. The former is wasteful



of bandwidth, the later means the judge needs to either be inserted in the stream or inject a flagged packet into the stream in such a way that it does not get filtered.

Each IGate program must be modified to accept commands from the judge, rather than make their own decisions.

You need to make the system redundant, so that internet messaging does not fail when the judge goes down.

>be implemented. In programming terms, I was just asking for the "hooks",  
>be it at your  
>site, or remotely, be considered.  
>

If I'm missing an implementation that is really just a few hooks, please bore me with the details. I think this proposal would require a redesign of the network, a complete rewrite of APRServe, and large changes to every program that includes IGate code. Unless it was done right, it could easily decrease the reliability of the internet messaging.

Steve K4HG

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## 46. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Paul Keinanen <keinanen@sci.fi>  
Date: Sun, 09 Apr 2000 13:15:19 +0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76317-2000.04.09-05.16.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 08 Apr 2000 17:30:48 -0400, Jeff King <jeff@aerodata.net>  
wrote:

>Hi all:  
>  
>I think a limited set of goals are outlined for APRS version 1.0, but the world has  
>changed substantially since APRS was conceived.  
>  
>It might be worthwhile to consider the "vision" of APRS before proceeding on  
>to version 2.0. Vision in the sense of seeing the future direction of the world, and  
>setting some specific goals here.  
>  
>It would be helpful here to have some discussion from members of the APRS-WG,  
>who with one exception, have not participated very much in an open forum  
>discussing the future of amateur AVL.  
>  
>I've got a few things to through out, while not goals, might get things started with  
>APRS version 2.0. Lots of this has already been discussed here.

\* Make it an international standard. This would require at least:

- Support for international units in messages.

While the current situation using only imperial units is not as bad as it seems to be, since only by lucky coincidences (e.g. knots having greater resolution than m/s or feet having greater resolution than m) it is possible to transfer most measurements taken in SI units over a link using imperial units and display the values in SI units, without modifying the numeric value, provided that exactly the same conversion factors are used and exactly the same rounding rules are applied all over the network. Thus, the exact conversion factors and rounding rules should be clearly spelled out already in version 1.0.

However, other situations are not so lucky (e.g. measurements taken in km/h is transferred over link with mph, will not always produce a correct displayed result).

Thus, the unit should always be included in the message (even if it is a single bit telling that all measurements in this message are either SI or imperial) and each forwarding station should include this information and not modify the values. Only the final display station should do the conversion to the user selected unit, thus avoiding any unnecessary rounding errors.

- Support for non-US-ASCII characters.

The transmission medium must be 8 bit clean.

The problem is which character set to use. It would be tempting to use some version of ISO-8859-x, but this would require that the code page identifier to be included with each message carrying textual information. In border areas it would be quite normal to use several code pages.

It would be a better idea to go directly to Unicode and code it as UTF-8 for transmission. In UTF-8, the traditional US-ASCII characters would still occupy only 1 byte/character, but for other characters 2 or 3 bytes/characters will be required. It is clear that no application would be required to support the more than 40000 Unicode characters, but regional subsets can be created. For Europe, there are three defined subsets (MES-1, MES-2 and MES-3 with about 500, 2000 and 4000 characters respectively) that all support the Latin, Cyrillic and Greek scripts. A device not capable of displaying even these could use some fallback tables to convert the text to local 8 bit or even to 7 bit US-ASCII for displaying it.

Paul OH3LWR

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## 47. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Steve Dimse K4HG <[k4hg@aprs.net](mailto:k4hg@aprs.net)>  
Date: Sun, 9 Apr 2000 06:33:48 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-76319-2000.04.09-05.34.20--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-76319-2000.04.09-05.34.20--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 4/9/00 6:15 AM Paul Keinanen ([keinanen@sci.fi](mailto:keinanen@sci.fi)) wrote:

>- Support for international units in messages.  
>

This is a client program issue. It doesn't matter if the on-the-air protocol speed is in conch shells per lunar month, as long as everyone knows what the units are, and the client program converts it into units the user can understand.

I see no reason to complicate the on-the-air protocol. Suppose this were implemented...would you display the results in the units specified by the sender or convert some and not others so the units were the same? The former is much more confusing IMHO, the user expects a column of numbers to be the same units. If you are going to display all in the same units, why allow both on the air? Easier to save a bit, and convert all or none as the user desires.

Steve K4HG

---

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## 48. [aprsspec] Re: [aprssig] IGate placement

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Sun, 9 Apr 2000 06:52:24 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-76324-2000.04.09-06.53.04--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-76324-2000.04.09-06.53.04--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I wrote two magazine articles back in the early 90's. If you write it up magazine style, you don't really care, as you just want the \$50 per page...

What is attractive about APRS, is its simplicity. I use it because I like to keyboard chat, or keep track of WF6H-14 as he trucks across America, or follow KB4HRV's flights over Havana :-)

While I don't think there is any great need to modernize the programs, there are many areas, that now documented, show the limits of where it can/will be going. The igate can complicate things, but the current population is technical enough to manage their output, or if not, some local policeman will be sure to point you out at the next

club meeting.

Best Regards,  
Steve/k5okc

"You can learn a lot about a protocol at 30 bytes/sec thru-put"

> Now, writing is all well and good, but nobody reads the stuff it appears.

>

> Clearly, one must do more then write, one must be a RF expert and a software  
> expert.

---

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## 49. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Paul Keinanen <keinanen@sci.fi>  
Date: Sun, 09 Apr 2000 17:48:44 +0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76396-2000.04.09-09.49.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 9 Apr 2000 06:33:48 -0400, Steve Dimse K4HG <k4hg@aprs.net>  
wrote:

>On 4/9/00 6:15 AM Paul Keinanen (keinanen@sci.fi) wrote:

>

>>- Support for international units in messages.

>>

>This is a client program issue. It doesn't matter if the on-the-air  
>protocol speed is in conch shells per lunar month, as long as everyone  
>knows what the units are, and the client program converts it into units  
>the user can understand.

Provided that a suitable resolution is available in the transfer  
encoding and this has to do with the maximum value allowed. With too  
bad resolution, values can not be transferred transparently when using  
some specific source and display unit.

Assume a hypothetical speed encoding using unsigned binary values.  
Since Concord seems to be the only civilian object going over Mach 1,  
it would be natural to set the full scale to that speed. Thus, in an 8  
bit system Mach 1.0 would correspond to transmitting numeric value  
255, on a 12 bit system the max value would be 4095 and on a 16 bit  
system it would be 65535. Thus the resolution would be, when expressed  
in various speed units (use a fixed width font):

| 8 bit | 12 bit | 16 bit |      |
|-------|--------|--------|------|
| 1.3   | 0.083  | 0.005  | m/s  |
| 4.8   | 0.3    | 0.019  | km/h |
| 3.0   | 0.19   | 0.012  | mph  |
| 2.6   | 0.16   | 0.01   | knot |

Clearly, the 8 bit system is inadequate, since you could not even get  
the unit digit correct in most cases. With 12 bits, speeds down to 0.1  
m/s can be reliably transferred, which might be handy for tracking  
pedestrians, but the speed could only be reliably displayed to 1 km/h,  
1 mph or 1 kt. With 16 bit, speeds with 0.01 unit resolution could be  
reliably transferred, which seems to be a bit of an overkill, unless  
you are tracking snails :-).

>I see no reason to complicate the on-the-air protocol. Suppose this were  
>implemented...would you display the results in the units specified by the  
>sender or convert some and not others so the units were the same?

That would be set by the user preferences in the display device.  
Unless we are talking about intercontinental tracking, in practice the  
data generating device and the user display preference would be the  
same as the units used in that part of the world.

Paul OH3LWR

---

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## 50. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 9 Apr 2000 11:05:40 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76397-2000.04.09-10.06.31--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 8 Apr 2000, Jeff King wrote:

>>  
>>> It might be worthwhile to consider the "vision" of APRS before proceeding  
>>> to version 2.0.  
>>>  
>>> 1. Backwards compatibility should not be a major issue.  
>>  
>> Bob Said: Then you probably need to plan on using a different  
>> frequency than 144.39...  
>  
> Jeff Said: Thats not my concern.  
> I'd actually rather here from you what you think APRS should be.... what is  
> your "vision" for it..... its evolution. This would frame any  
> discussions of APRS version 2.0 even better then specifics..  
> Thanks  
> -Jeff

Simple, something that works.  
Something that allows use of what we have until everyone choses to  
upgrade. Im all for advancing the state of the art. It is unbelievable  
what we can do with digital and HAM radio. We are using probably less  
than 10% of our VHF spectrum.

See my 1994 article using the input channels of VOICE repeaters to  
deliver over 3 Mbytes of data per hour and yet not impact voice users on  
thse same repeater. With over 50 such channels on 2 meters alone, thats  
150 Mbytes per hour without asking for a single new channel from frequency  
coordinators, and the repeaters are still never more than 1 second away  
from normal use by any existing voice user.

All we need is people doing things. If you build something that works,  
people will use it.

As for APRS, its only packet. AX.25, UI frames. Its nothing new since  
1978. Its only an application. Do not try to burden it with all the  
"things that could be...". We can tweak it, optimize it, but any step  
function radical change will probably need to seriously address backwards  
compatibility, or move to a different frequency.

Thats what APRS had to do. No way would APRS be tolerated on existing  
networks had it not been for the general demise of packet anyway. APRS  
was NOT WELCOME back in 1992 and objected to by most all packet guru's at  
the time. Therefore we spun our own network...

I suspect such is the way of life...

Bob, WB4APR

---

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## 51. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 9 Apr 2000 12:57:55 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76410-2000.04.09-11.59.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 9 Apr 2000, Paul Keinanen wrote:

> Assume a hypothetical speed encoding using unsigned binary values.  
> Since Concord seems to be the only civilian object going over Mach 1,  
> <snip>  
> Clearly, the 8 bit system is inadequate, since you could not even get  
> the unit digit correct in most cases. With 12 bits, speeds down to 0.1

> m/s can be reliably transferred, which might be handy for tracking  
> pedestrians, but the speed could only be reliably displayed to 1 km/h,  
> 1 mph or 1 kt. With 16 bit, speeds with 0.01 unit resolution could be  
> reliably transferred, which seems to be a bit of an overkill, unless  
> you are tracking snails :-).

Thats why APRSdos uses LOG speed vectors for display and the compressed  
APRS format uses a LOG scale. It can resolve snail speeds and Concord  
speeds to the same geometric precision.

bob

---

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---

## 52. [aprsspec] Re: [aprssig] Re: IGate placement

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 09 Apr 2000 15:21:07 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>,  
APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76423-2000.04.09-14.25.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Dimse K4HG wrote:

> On 4/9/00 3:53 AM Jeff King (jeff@aerodata.net) wrote:  
>  
> >2. I stated that I felt it better to embrace the internet, and have as many  
> >internet gateways as possible, even if they heavily overlapped.  
> >  
> In the context of contemplating an indefinite future.

Right, that's why I called it future food for thought. Least power routing.

> This is not a few hooks, it turns the system on its ear. You propose  
> taking the decision to IGate out of the hands of the individual clients  
> and placing it in a central server.

But isn't this how it is done now? You decide who is the dedicated  
IGate for an area? (in conjunction of course with a willing volunteer).

All I am suggesting is, eventually, a weighted lottery method based on  
a number of criteria that could be determined electronically be used.  
The intent here being the opposite of what you asked for... not  
to decrease the number of I-gates but to increase them.

The difference being instead of one selecting the I-gate, the system does  
this for you based on a number of criteria, location not being the only one. I-Gates  
are "awarded" for being on the air and available by having there weighting  
factor (chance they will be used) increased. I suspect, having played with mysql  
a little, it would not be to hard to use it to determine some of these weight  
factors already. (reliability being one of them)

This being for the purpose of implementing least power routing on our  
RF channel. I believe Tim Shepherd wrote a paper long these lines  
for is MIT thesis. Phil Karn is also a big advocate of this method.

> >While I won't bore you with the technical details, this boils down to  
> >something  
> >called "least power routing" which is a common industry standard.  
> >  
> To determine this, you need to do even more modification to the system.

Again, food for thought. That's all I was presenting it as. It was my feeling  
that the benefits were very attractive, in particular long term scaleability.  
But your right.... I'm not going to tell you what to do. Also, I'm not in  
a position to duplicate and write a "new" APRSERVE and FINDU. Its beyond  
my present capabilities. So I'll be silent on this aspect of it.

> Each IGate program must be modified to accept commands from the judge,  
> rather than make their own decisions.

Oh, I understand that. That's what I meant by "hooks". I think the thing that is  
being lost, in particular those that are telling me to "do it myself" (a good point  
however) is APRS development really is a collaborative effort.... more so then almost any

other amateur program. While NOS was also a networking program, they were able leverage off of the existing tcp/ip protocols and had a strong standards body directing the core effort (as does Linux in the form of the benevolent dictator Linux TovaDs).

This has been my fundamental misunderstanding in these conversations since May. I'll try to correct this.

> You need to make the system redundant, so that internet messaging does  
> not fail when the judge goes down.

Yes, of course.

> >be implemented. In programming terms, I was just asking for the "hooks",  
> >be it at your  
> >site, or remotely, be considered.  
> >  
> If I'm missing an implementation that is really just a few hooks, please  
> bore me with the details.

Well, here are a few things that might be logged (and they may already be logged by FINDU) in determining a weighting factor. I'm also not 100% sure of the retry/routing method you presently use for messaging... is that documented anywhere?

Again, before I proceed, the point of this was to have MORE internet gateways to reduce the number of digi's needed to INCREASE channel capacity by implement a crude form of least power routing. That's it. Here are the hooks for the weighting database part of it. \* means optional and not really needed

1. Geographic location of IGATE(s) hearing message
2. \*Signal strength info from this IGATE (would be nice, but I know it won't happen)
3. Geographic location of user wishing RF message
4. Ground elevation of IGATE (user or DEM derived)
5. Reliability factor of IGATE (i.e. is it up each hour of each day?-- posits heard --)
6. ERP of IGATE (user entered)
7. Antenna height of IGATE (user entered)
8. \*Crosscheck on Antenna height (direct posit derived... not used in calculation but as method to roughly confirm antenna height so user doesn't "fudge" things... this could happen)
9. History of this I-GATE.... how many messages did it successfully deliver?

Now, one could simply start out with points 1 & 2 (chose the closest geographical pairs). I'd immediately start logging point #9.... this will catch the I-Gates who have there transmitters improperly configured (overdeviation etc) and one can reduce there weight. Now it starts to become more complicated.

Reliability also is a factor.... that is, how often is the I-GATE on the air? This is your reward carrot.... assuming a ham wants his station used as a I-GATE (the carrot) one logs over time if that station is on the air (no more then once per hour however to stop them from increasing the posit rate). Lets say the ham has a 99% up rate. He gets a high weighting number. If he has a 50% up ratio, then the weighting factor is lowered. This may not be needed at all depending on your transport method for messaging on the internet (ack ack?). But still might be useful as you'd still be logging over the air stuff.... which is the bottom line.

Now, I don't think the above method really takes a complete rewrite, does it? You presently have a criteria you use to determine who to send a over the air message to be be transmitted. All the above information is already available to you, or could be derived. If not, specifically what is missing from the system?

Points 2, 4 (ground elevation), 6 (ERP), 7 (antenna height) and the crosscheck are all used to implement least power routing more directly, and might be a more long term thing.

So instead of only considering only geographical location, one also factors in other things. Lets say for example one has two I-gates that heard the signal, and now one wants to transmit through one of them. Both are the same distance from the msg client and both have the same history and reliability factor.

So, which one do we chose??

With least power routing, the idea is to minimize the RF footprint so as to have less impact on outlying areas to improve frequency re-use. Just like CDMA does it. So lets say we want to see at least a 40DB S/N signal at our client (who by default is modeled as a mobile user). Factoring in the noise level, we need at least a S-9 signal for a BER of 10-4 or better. So we pick the biggest station with the highest ERP/height, right? Not necessarily. In this case, both are only 5 miles away and both stations would dramatically exceed the 40db S/N we set as our threshold. So in this case, we pick the I-GATE that has the SMALLER RF foot print (lower ERP/height). This has no effect on our messaging but it causes less interference to those in outlying areas. Meaning, we have both increased channel capacity

and increased the reliability of the system.

> I think this proposal would require a redesign  
> of the network, a complete rewrite of APRServe, and large changes to  
> every program that includes IGate code.

Possibly and the reason I am calling this food for thought. Or it may be APRS simply won't scale any further. We've already received reports on the SIG on congestive collapse of some of the urban networks. So maybe its terminal already. But these are the issues one might consider now, if one can.... this is not another quick fix but a method to allow almost infinite scaling of the system (see Tim's paper). As the system evolves, if one makes these considerations ahead of time, implementing them will be that much easier.

>Unless it was done right, it  
>could easily decrease the reliability of the internet messaging.

Maybe, but if one agree with the following two statements, then having more I-GATES, instead of less I-GATES might eventually make sense, assuming the system can handle it. Least power routing..

1. A close direct path , IF POSSIBLE, is more reliable then a long digipeated path.
2. The direct path has less impact on the channel, thereby allowing more users to be on the channel (no/less digi's means less transmissions and a smaller RF footprint)

73

Jeff

>

---

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### 53. [aprsspec] Re: [aprssig] Re: IGate placement

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 09 Apr 2000 16:55:16 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>, APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76440-2000.04.09-15.59.22--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Dimse K4HG wrote:

> I think this proposal would require a redesign  
> of the network, a complete rewrite of APRServe, and large changes to  
> every program that includes IGate code.

Someone explained to me off-sig how I-Gate messaging worked from a internal perspective. In light of this, I completely agree with you.

-Jeff

---

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### 54. [aprsspec] Re: [aprssig] Re: IGate placement

From: Steve Dimse K4HG <k4hg@aprs.net>  
Date: Sun, 9 Apr 2000 17:12:19 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>  
Message-ID: <LYR11589-76441-2000.04.09-16.13.17--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/9/00 3:21 PM Jeff King (jeff@aerodata.net) wrote:

>

>Steve Dimse K4HG wrote:

>

>> This is not a few hooks, it turns the system on its ear. You propose  
>> taking the decision to IGate out of the hands of the individual clients  
>> and placing it in a central server.

>

>But isn't this how it is done now? You decide who is the dedicated

>Igate for an area? (in conjunction of course with a willing volunteer).

>

This episode I mentioned was the first time I've ever done anything to manage who could and couldn't be an IGate. Even in this case, all I did was suggest the two people talk to each other. If they both still want to be IGates, I'll add them both. As I say, this doesn't affect the internet side, it affects the RF side. It is not my place to manage local RF nets.

The decision I'm talking though about is who transmits a given packet. Right now each IGate makes the call itself on each packet. Each IGate keeps track of who it considers local, and when a message appears to one of an IGate's local users, it sends it.

>The difference being instead of one selecting the I-gate, the system does  
>this for you based on a number of criteria, location not being the only  
>one. I-Gates

>are "awarded" for being on the air and available by having there weighting  
>factor (chance they will be used) increased. I suspect, having played with  
>mysql

>a little, it would not be to hard to use it to determine some of these weight  
>factors already. (reliability being one of them)

>

There is no infrastructure for collecting this information, nor any single place it can be acquired. It would require multiple modifications to most pieces of the present system.

>> >be implemented. In programming terms, I was just asking for the "hooks",  
>> >be it at your

>> >site, or remotely, be considered.

>> >

>> If I'm missing an implementation that is really just a few hooks, please  
>> bore me with the details.

>

>Well, here are a few things that might be logged (and they may already be  
>logged

>by FINDU) in determining a weighting factor. I'm also not 100% sure of the  
>retry/routing method you presently use for messaging... is that documented  
>anywhere?

>

<http://www.aprs.net/inetmsg.html>

There was also my DCC98 paper, in the proceedings or at

<http://www.aprs.net/vm/dcc98.html>

I hadn't looked at the first link in quite a while, interesting to note that a couple years ago I wrote that the server was "very popular", documenting more than 40 users at a time and 500 connects a day. Now the two servers support more than 300 users most of the time and 5000 connects a day! I wonder if it will increase 10 fold again over the next 2 years!

The routing method, if you want to call it that, is quite simple. Every IGate sees every packet, and if a station is local, it transmits the message. Local means heard in x hops or less, generally 2, which matches the WIDES in the outgoing path. Acks are end to end.

>...

>Now, I don't think the above method really takes a complete rewrite, does  
>it?

For gathering this data, there still must be an infrastructure created that allows access to each packet without filtering, and that can identify the source of each packet. This means either creating a new system that runs in parallel with APRServe, or a big rewrite of APRServe to change the way it handles data.

>You

>presently have a criteria you use to determine who to send a over the air  
>message to be

>be transmitted. All the above information is already available to you, or  
>could be derived.

>If not, specifically what is missing from the system?

>

Just to pick one of your unstarred criteria:

>9. History of this I-GATE.... how many messages did it successfully deliver?

This means the ACK from a client would need to identify which IGate it got the message from. The ACK protocol needs to be changed, and every



client program, not to mention every D7 and D700, would need to be updated.

Of course, if you guarantee that only one station sends a message, then you can collect this info fairly easily, but the command/control system to cause single transmissions is entirely lacking.

>So instead of only considering only geographical location, one also  
>factors in other  
>things.

Geographical location is never looked at in the present system, it is a functional criteria. The target must be heard within x hops (generally 2) of the IGate within the last hour.

>Lets say for example one has two I-gates that heard the signal,  
>and now  
>one wants to transmit through one of them. Both are the same distance from  
>the  
>msg client and both have the same history and reliability factor.  
>  
>So, which one do we chose??  
>  
Right here is the greatest amount of work. First, you have to create this central judging program (with a redundant backup and a means for switching between them), then you have to somehow place each IGate under the control of this authority. I'm sorry, but this is not "just adding a few hooks".

Steve K4HG

---

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## 55. [aprsspec] Re: [aprssig] Re: IGate placement

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 09 Apr 2000 17:49:38 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>,  
TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
Message-ID: <LYR11589-76447-2000.04.09-16.51.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve Dimse K4HG wrote:

> . It is not my place to manage local RF nets.

Maybe not.... but it will need to be done someday, I suspect sooner rather than later.

> The decision I'm talking though about is who transmits a given packet.  
> Right now each IGate makes the call itself on each packet. Each IGate  
> keeps track of who it considers local, and when a message appears to one  
> of an IGate's local users, it sends it.

This was the fundamental problem I had. I thought there was some mechanism in place to limit this. In essence, you are considering the whole network as one big ethernet segment, and whatever "bridge" hears the user, takes it in. Must be an absolute mess during band openings.

One question, in your paper at <http://www.aprs.net/inetmsg.html> you state:

>Potential Problems

>The biggest problem that may occur with the new IGating system is QRM.  
>In its present implementation, no check is made for the existence of multiple  
>IGates in an area. Therefore, if an area has multiple IGates enabled to retransmit  
>messages, a message to a local station will cause all of them to transmit it. We  
>think we have a way for the system to deal with this problem, but it will take a  
>while to get it implemented. In the mean time, it is up to local users to be aware  
>of who the other IGates are, and to coordinate with them.

As you did recognize this problem at that time, what did you have in mind to fix it and why wasn't it implemented?

> The routing method, if you want to call it that, is quite simple. Every  
> IGate sees every packet, and if a station is local, it transmits the

> message. Local means heard in x hops or less, generally 2, which matches  
> the WIDES in the outgoing path. Acks are end to end.

Right, as far as APRSERVE is concerned, your talking to one big ethernet segment. Of course, radio isn't one big ethernet segment. In light of this, I agree with you that it would be completely impractical to change APRSERVE..... even so, there still might be a chance to implement a least power routing system, the focus now just changes to the I-GATE stations.

Or is it your feeling this is impractical also?

> >So instead of only considering only geographical location, one also  
> >factors in other  
> >things.  
>  
> Geographical location is never looked at in the present system, it is a  
> functional criteria. The target must be heard within x hops (generally 2)  
> of the IGate within the last hour.

OK, then the smaller "x hops" is, the higher the weighting factor. Would this work? 0 hops (direct) being highest and so on.

Still, with APRSERVE being just one big ethernet segment, I don't see how this could be communicated.

Oh well, maybe in the next life.

73

Jeff

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## 56. [aprsspec] Re: [aprssig] Re: IGate placement

From: Steve Dimse K4HG <[k4hg@aprs.net](mailto:k4hg@aprs.net)>  
Date: Sun, 9 Apr 2000 18:05:30 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, "TAPR APRS Special Interest Group" <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>  
Message-ID: <LYR11589-76450-2000.04.09-17.06.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/9/00 5:49 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:

>  
>  
>Steve Dimse K4HG wrote:  
>  
>> . It is not my place to manage local RF nets.  
>  
>Maybe not.... but it will need to be done someday, I suspect sooner rather  
>than later.  
>  
Not on a national level. The QRM is local, the issue is local. It would be like the APRSWG declaring they would decide where all the digis in the country have to be placed...  
>  
>As you did recognize this problem at that time, what did you have in mind to  
>fix it and why wasn't it implemented?  
>  
The fix I thought of was random holdoff. If you are an IGate, after you decide to transmit a message, you wait x+random(y) seconds...if you hear the message on RF, you know someone else has transmitted it, so you don't. y would be decided based on the number of IGates and digis in an area, x would vary based on priority. This could be as simple as the presumption that IGates running aprsd are full time, and so have shorter holdoff, while clients like WinAPRS would have longer ones. More fraught with danger is to make it user-configurable. More complex would be to listen for other IGates and dynamically adjust the numbers.

Never got implemented because it never got high enough on the list. Lots of people complain about no IGate close enough to them, no complain reached my ears about too many. In any case, I only have control of

APRServe, which provides IGate services to South Florida and SoCal only...

>

>> The routing method, if you want to call it that, is quite simple. Every IGate sees every packet, and if a station is local, it transmits the message. Local means heard in x hops or less, generally 2, which matches the WIDES in the outgoing path. Acks are end to end.

>

>Right, as far as APRSERVE is concerned, your talking to one big ethernet segment. Of course, radio isn't one big ethernet segment. In light of this, I agree with you that it would be completely impractical to change APRSERVE..... even so, there still might be a chance to implement a least power routing system, the focus now just changes to the I-GATE stations.

>

>Or is it your feeling this is impractical also?

>

How would you have the IGates gather and distribute the info they would need?

>

>> >So instead of only considering only geographical location, one also >> >factors in other >> >things.

>>

>> Geographical location is never looked at in the present system, it is a functional criteria. The target must be heard within x hops (generally 2) of the IGate within the last hour.

>

>OK, then the smaller "x hops" is, the higher the weighting factor. Would this work? 0 hops (direct) being highest and so on.

>

Yes but...

One of the problems is variable propagation. Say one IGate hears usually in three hops, but just happens to get a packet once by one hop. Not such a big deal when the reliable IGate 2 hops away will also send the message, but if you implement a control system to make only the best IGate transmit, then you need to be a lot more rigorous, perhaps examining each RF packet and running a moving average on each station. More work, and the trouble here is it must be done in parallel by at least 4 different authors...

Steve K4HG

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## 57. [aprsspec] Re: [aprssig] Re: IGate placement

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
 Date: Sun, 09 Apr 2000 18:35:49 -0400  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>  
 Message-ID: <LYR11589-76453-2000.04.09-17.37.53--lyris.aprsspec@tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

Steve Dimse K4HG wrote:

>

> >As you did recognize this problem at that time, what did you have in mind to > >fix it and why wasn't it implemented?

> >

> The fix I thought of was random holdoff. If you are an IGate, after you > decide to transmit a message, you wait x+random(y) seconds...if you hear > the message on RF, you know someone else has transmitted it, so you > don't. y would be decided based on the number of IGates and digis in an > area, x would vary based on priority. This could be as simple as the > presumption that IGates running aprsd are full time, and so have shorter > holdoff, while clients like WinAPRS would have longer ones. More fraught > with danger is to make it user-configurable. More complex would be to > listen for other IGates and dynamically adjust the numbers.

Yes..... that would work. One other mechanism to consider here is if the message comes through a second time (or more) the station that sent it goes to a slightly HIGHER holdoff, lets call this h. The assumption being is that the station that sent it didn't make it, so go with another station. If no other station exists, the one sending it the first time would still send it again, just with x+random(y)+h. H would only be set once per message. Everyone would get the same first shot at it, then the person that sent it steps to the back of the line.

Would it also be possible to weight this formula with the digi-hop number also?

> Never got implemented because it never got high enough on the list. Lots  
> of people complain about no IGate close enough to them, no complain  
> reached my ears about too many.

Well, as you said, you've had a 10x increase since 1997. Again, the paradigm has changed since then. Now we are seeing full time internet access at more and more ham shacks. So not only has APRS users increased 10X since 1997, I'd think those that have full time internet have also increased at least 10X. So we are looking at at least a potential 100X increase in potential full time I-GATES since 1997.

In any case, this sounds like a local I-GATE issue and not an APRS-SERVE issue. Would it be possible for you to submit your plan to the APRS-WG, assuming you formally wrote it up. This is not something someone can "go out and code". Everyone needs to adopt it in a similar manner for it to be effective.

Alternately, I guess they are getting this e-mail.

Anyways, thanks for the go around. It was very enlightening.

73

Jeff

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## 58. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Mon, 10 Apr 2000 01:22:11 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-76507-2000.04.10-00.25.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

>  
>  
> See my 1994 article using the input channels of VOICE repeaters to  
> deliver over 3 Mbytes of data per hour and yet not impact voice users on  
> thse same repeater.

Is that online? I'd like to see it.

> We can tweak it, optimize it, but any step  
> function radical change will probably need to seriously address backwards  
> compatibility

Maybe, but there has to be some point we move on. I'd think any upgrade the cost under \$100 and offered substantial improvments might be immune from the need to use 15 year old TNC's.

> , or move to a different frequency.

Question for you.... can those Kenwood radios receive at 9.6kbaud on 440 and at the same time the transmit and receive at 1.2kbaud on 2meters?

Thanks

-Jeff

---

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---

## 59. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 10 Apr 2000 08:31:24 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76530-2000.04.10-07.32.10--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> > See my 1994 article using the input channels of VOICE repeaters to  
> > deliver over 3 Mbytes of data per hour and yet not impact voice users on  
> > these same repeater.  
>  
> Is that online? I'd like to see it.

It got removed from the APRSdos docs many years ago when I needed more room. But it is very simple. You stream data at 9600 baud from a voice repeater site by transmitting on its INPUT frequency. This is 9 packets at a burst. So for 900 ms you are streaming data, and for less than 100 ms the carrier drops and listens for anyone wanting to use the repeater.

Thus voice users are totally unaffected. They key their voice radio and within one second, the repeater hears them and they use the repeater normally. Whenever the repeater drops, it continues with the data feed.

The beauty is that it requires NO user mods. Every voice radio and voice user sees NO change. Yet for the 95% of the time that the repeater is idle, it is passing megabytes on its input frequency. (No one ever listens to the repeater input frequency).. Notice this is a one-way feed. Only the REPEATER itself can judge when the repeater input frequency is not busy. But this is exactly the way WEB pages work, 99% of the data goes one way.

The digital stations just capture everything. If a user needs to request a file, then his single packet gets transmitted on a common channel such as 145.01...

This idea got very little attention back then, because everyone was still thinking in terms of balanced two-way connect-type exchanges. But the WEB has changed all that... Now it is perfect!

de WB4APR, Bob

---

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---

## 60. [aprsspec] Re: APRS Version 2.0, the "vision thing"

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 10 Apr 2000 08:32:03 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-76531-2000.04.10-07.33.02--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 10 Apr 2000, Jeff King wrote:

>  
> Question for you.... can those Kenwood radios receive at 9.6kbaud on 440  
> and at the same time the transmit and receive at 1.2kbaud on 2meters?

No. It can operate cross band, but not at different rates..

bob

---

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---

## 61. [aprsspec] APRS Compressed Position Format

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Fri, 14 Apr 2000 16:51:07 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77467-2000.04.14-10.52.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I need some real examples of APRS compressed position data, to help verify that the APRS Protocol Spec is correct.

If you transmit your posits in compressed format, please send me some

examples, together with the corresponding lat/long coordinates.

Thank you.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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---

## 62. [aprsspec] GUI that supports COMPRESSED FORMAT?

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 14 Apr 2000 20:28:56 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77575-2000.04.14-19.41.28--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At one point, only APRSDOS was supporting the new compressed format.

Is anyone else supporting the compressed format?

WinAPRS?  
APRS/CE?  
XASTIR?  
PALM/CE?  
SA4+?  
XASTIR?  
UIVIEW?

Thanks

-Jeff

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---

## 63. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 14 Apr 2000 21:14:14 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77580-2000.04.14-20.15.19--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 14 Apr 2000, Jeff King wrote:

> At one point, only APRSDOS was supporting the new compressed format.  
> Is anyone else supporting the compressed format?  
>  
> WinAPRS?  
> APRS/CE?  
> XASTIR?  
> PALM/CE?  
> SA4+?  
> XASTIR?  
> UIVIEW?

Easy way to tell. If you monitor for APRSTk satellite posts from anyone, they default to COMPRESSED. Also PCSAT is in compressed as well as my home station WB4APR... Might give you some samples to look for.

Look for objects with the names of U022, K023, K025, T031, etc..

Bob

---

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## 64. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Fri, 14 Apr 2000 21:27:48 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-77583-2000.04.14-20.39.05--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-77583-2000.04.14-20.39.05--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob Bruninga wrote:

>

> Easy way to tell. If you monitor for APRSTk satellite posts from anyone,  
> they default to COMPRESSED.

Right, but I didn't want to run every application I listed to determine that.  
Figured asking the SIG would be the quickest way to determine which  
ones besides your support it

Maybe if I rephrase:

Which of the following AGPS GUI apps support decoding of the  
COMPRESSED FORMAT:

APRSDOS - YES  
APRSTk - YES  
Kenwood radios - YES?  
WinAPRS - ??  
XASTIR - ??  
APRS/CE - ??  
PALM/CE - ??  
UIVIEW - ??  
SA4+ - ??  
Others?

73

-Jeff

---

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## 65. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Fri, 14 Apr 2000 22:42:01 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-77590-2000.04.14-21.43.11--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-77590-2000.04.14-21.43.11--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 4/14/00 9:27 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:

>Which of the following AGPS GUI apps support decoding of the  
>COMPRESSED FORMAT:

>

>Others?

>

findu.com No, but high on the do-list. Anyone want to donate the C code?

APRServe No, but with findu [map.aprs.net](http://map.aprs.net) is not going to be supported,  
not a priority. It will, of course, pass the positions just fine.

javAPRS No, no plans to implement unless I have to get back into the code  
for some other reason

Steve K4HG

---

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## 66. [aprsspec] Query Lines Boxes and Etc

From: "Dale Huguley" <kg5qd@worldnet.att.net>  
Date: Sat, 15 Apr 2000 17:34:49 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77745-2000.04.15-12.37.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All-

I am trying to output Tornado and Severe Thunderstorm Watch boxes from the Storm Prediction Center in Norman, OK - and I am have protocol questions.

1. On page 47 of the draft- in Chapter 11- the chart shows Object types 1 = line and 6 = colored line

Since you can define the color for all the types - whats the difference between a colored line and a line with color? This makes sense if 1= a line that needs to have its end down and to the right and 6= equals a line that ends down and to the left. This means that a "corridor" can only down and to the left. I can program around that if we are talking about a rectangle- but not all watch boxes are rectangles. I now need to goto 4 lines to define a box- not extremely efficient. The NWS is telling me that they are going to polygons- 3-4-5 or 6 sides maybe.

2. The last paragraph of Chapter 11 states that "Some stations transmit Object reports without the " ; ' APRS data type Identifier. This format is obsolete. Some software may still decode it, but this is not required." Maybe so- but winAprs does not support it- so I will continue to output objects without the semicolon until everyone goes over to this format. If any software is not supporting "semicolonless" object I need to know so I can put it out both ways.

3. I cannot get winaprps to display any line.triangle,ellipse etc.- this could be a problem with my parser- but I am following the Spec as I understand it. However if there are programs that are currently supporting the spec on area objects let me know and I will begin to output the watch boxes.

4. There is a crying need for a multipoint format for polygons- for example: almost every tornado and severe thunderstorm warning has a polygon that is the "Area of Maximum Concern" which is the area the radar computer thinks is at greatest risk. How about a string of compressed lat/longs? Actually the NWS has it fairly compressed already I E  
LAT...LON 3669 9495 3651 9497 3651 9418 3676 9417  
this is in degrees and hundredths

Any help would be appreciated

73 de kg5qd Dale

---

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## 67. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 15 Apr 2000 19:26:48 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77776-2000.04.15-18.37.38--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Here is what I have so far:

>Which of the following AGPS GUI apps support decoding of the  
>COMPRESSED FORMAT?

APRSDOS - YES  
APRSTk - YES  
Kenwood radios - YES?  
WinAPRS - No (user reports compressed not decoded properly)  
XASTIR - Yes  
APRS/CE - ??  
PALM/CE - ??  
UIVIEW - ??  
SA4+ - ??  
FindU - No (real soon?)  
APRSSERVE - "No" but this passes the reports just fine  
JavAPRS - No, no immediate plans to add this.



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## 68. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sat, 15 Apr 2000 22:26:46 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-77838-2000.04.16-00.27.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-77838-2000.04.16-00.27.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

My implementation of GUI-driven APRS, provisionally called "easyAPRS" will support compressed format. It will not transmit in compressed format, but will receive, decode, and display.

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 69. [aprsspec] Current discussions

From: Keith Sproul <[ksproul@vger.rutgers.edu](mailto:ksproul@vger.rutgers.edu)>  
Date: Sun, 16 Apr 2000 07:06:01 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-77878-2000.04.16-06.08.16--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-77878-2000.04.16-06.08.16--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I am going to be away from email for over a week.. I am not ignoring the current discussions. I will have some replies when I get back.

Keith Sproul  
Keith Sproul 732 445-3695 Office  
Student Housing Network Coordinator 732 445-2968 Fax  
[mailto:ksproul@rci.rutgers.edu](mailto:mailto:ksproul@rci.rutgers.edu) 732 821-4828 Home  
<http://dorm.rutgers.edu/~ksproul/> WU2Z

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## 70. [aprsspec] MIC-E detection

From: "Tj Johnston" <[n4uyq@arrl.net](mailto:n4uyq@arrl.net)>  
Date: Sun, 16 Apr 2000 08:56:42 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-77891-2000.04.16-07.56.51--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-77891-2000.04.16-07.56.51--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

What is the easiest way to determine if a packet should be processed as a compressed packet or not.?

=====  
Tj Johnston, N4UYQ ICQ#3134626  
Hopewell, VA - Prince George Co. ARES/RACES  
Eastern Virginia APRS Group (EVA) - Sec/Treas.  
EVA Homepage: <http://www.qsl.net/eva/>  
APRSdigi Homepage: [www.qsl.net/n4uyq/aprsdigi.htm](http://www.qsl.net/n4uyq/aprsdigi.htm)  
=====

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## 71. [aprsspec] Re: MIC-E detection

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Sun, 16 Apr 2000 14:33:29 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77897-2000.04.16-08.33.52--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-77891-2000.04.16-07.56.51--Ian.Wade#care4free.net@lists.tapr.org>, Tj Johnston <n4uyq@arrl.net> writes  
>What is the easiest way to determine if a packet should be processed as a  
>compressed packet or not?

'pends what you mean by "compressed".

In the APRS Spec, we distinguish between "encoded" (meaning Mic-E format) and "compressed" (meaning compressed format).

To detect a Mic-E packet, you have to look first at the APRS Data Type Identifier (the first byte of the AX.25 Information field). For a Mic-E packet, this will be either ` (back quote/grave) or ' (apostrophe).

` means it is a Current Mic-E report (except for the Kenwood DM700).

' means it is an Old Mic-E Report (except for the Kenwood DM700, where it means it is a Current Mic-E Report -- this is a bug in the DM700 firmware).

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 72. [aprsspec] Correction: Semicolon non-problem

From: "Dale Huguley" <kg5qd@worldnet.att.net>  
Date: Sun, 16 Apr 2000 14:29:03 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77909-2000.04.16-09.32.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All-

A correction to my earlier post concerning a semicolon for the first character of a object- it works just fine in WinAprs- the problem appears to be between my ears.

I am moving all objects created by my parser to using a semicolon- let me know if that causes problems.

73 de kg5qd Dale

---

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## 73. [aprsspec] Cheap laptops and terminals

From: "Tj Johnston" <n4uyq@arrl.net>  
Date: Sun, 16 Apr 2000 15:06:53 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-77955-2000.04.16-14.07.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In order to provide better operation of APRSdigi and a few other future programs, I need to gather a little information from the multitude of APRS hams out there.

Many different types of cheap laptops and computers are being used for APRS.

I need to get a rough idea of what type of video and max resolution these may have.  
I don't want to waste coding space for rare types and resolutions.

If you get a chance, please send email to [n4uyq@arrrl.net](mailto:n4uyq@arrrl.net)

Let me know what Type:

MONO  
CGA with color display (like the Tandy 1000 desktop series)  
CGA with mono display (like the Tandy 1100 laptop series)  
EGA with color display  
EGA with mono display  
VGA with color display (like most current laptops)  
VGA with mono display (like the ruggedized APRS Terminals)

and the maximum resolution it supports. (ie: 640 x 480)

=====  
Tj Johnston, N4UYQ ICQ#3134626  
Hopewell, VA - Prince George Co. ARES/RACES  
Eastern Virginia APRS Group (EVA) - Sec/Treas.  
EVA Homepage: <http://www.qsl.net/eva/>  
APRSdigi Homepage: [www.qsl.net/n4uyq/aprsdigi.htm](http://www.qsl.net/n4uyq/aprsdigi.htm)  
=====

---

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---

## 74. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: "Curt Mills, WE7U" <[hacker@tc.fluke.com](mailto:hacker@tc.fluke.com)>  
Date: Mon, 17 Apr 2000 13:51:57 -0700 (PDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-78206-2000.04.17-15.52.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 15 Apr 2000, Jim Wagner wrote:

> My implementation of GUI-driven APRS, provisionally called "easyAPRS" will  
> support compressed format. It will not transmit in compressed format, but  
> will receive, decode, and display.

I believe this is the state that the Xastir code was last in. I contributed  
the decoder for the compressed format, but didn't write an encoder. I  
assume we're talking about the YYYYXXXX format.

Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
Senior Methods Engineer/SysAdmin  
"Lotto: A tax on people who are bad at math." -- unknown  
"Windows: Microsoft's tax on computer illiterates." -- WE7U

---

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## 75. [aprsspec] Re: Query Lines Boxes and Etc

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 17 Apr 2000 17:20:15 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-78211-2000.04.17-16.21.38--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 15 Apr 2000, Dale Huguley wrote:

> 1. On page 47 of the draft- in Chapter 11- the chart shows Object types  
> 1 = line and 6 = colored line  
> Since you can define the color for all the types - what's the  
> difference between a colored line and a line with color? This makes sense  
> if 1= a line that needs to have its end down and to the right and 6= equals  
> a line that ends down and to the left. This means that a "corridor" can  
> only down and to the left. I can program around that if we are talking about  
> a rectangle- but not all watch boxes are rectangles. I now need to goto 4  
> lines to define a box- not extremely efficient.

You are correct. Both are colored lines, but being linear one dimensional  
lines, there is no concept of "FILLED with color". But they DO have

WIDTH.

APRS can draw either of these lines at any angle and can then specify a line either side of that line. This matches the NWS descriptions perfectly of watch boxes extended X miles either side of a line between point A and point B. The format is noted in the spec to include the WIDTH parameter in the COMMENT field in BRACES as in {70} which would be 70 miles either side.

APRSdos draws this as the original line from point A to point B and then an oblique rectangle box with the sides 70 miles to either side. The rectangle is drawn with dotted lines of the same color as the original line. The result is a RECTANGLE of any width or orientation.

```
> 2. The last paragraph of Chapter 11 states that "Some stations transmit
> Object reports without the " ; ' APRS data type Identifier. This format is
> obsolete. Some software may still decode it, but this is not required."
> Maybe so- but winAprs does not support it- so I will continue to output
> objects without the semicolon until everyone goes over to this format. If
> any software is not supporting "semicolonless" object I need to know so I
> can put it out both ways.
```

Are you sure? The format using ";" is the only current format. The format without the ";" was decided to be obsolete back in 1997. We first implemented it in 1995 with the Sprouls concurrence. APRSdos, and any of the kenwood products require the ";" and ignore the obsolete format.

```
> 3. I cannot get winaprs to display any line.triangle,ellipse etc.- this
> could be a problem with my parser- but I am following the Spec as I
> understand it. However if there are programs that are currently supporting
> the spec on area objects let me know and I will begin to output the watch
> boxes.
```

```
>
> 4. There is a crying need for a multipoint format for polygons- for
> example: almost every tornado and severe thunderstorm warning has a polygon
> that is the "Area of Maximum Concern" which is the area the radar computer
> thinks is at greatest risk. How about a string of compressed lat/longs?
> Actually the NWS has it fairly compressed already I E
> LAT...LON 3669 9495 3651 9497 3651 9418 3676 9417
> this is in degrees and hundredths
```

Back in 95, I proposed a multipoint line drawing protocol and the Sprouls agreed. But neither of us got around to coding it. My format was scalable to any size. It included the LAT/LONG of the starting point and then a SCALE, and then a list of X/Y offsets for each of the points. Thus it could represent things as small as a few feet to as large as hundreds of miles. I can dig for it...

By using an origin and base-91 offsets, then we could send polygons (or contiguous line segments with as many as 40 points in a single 100 byte packet.

de WB4APR, BO

---

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---

## 76. [aprsspec] Re: Query Lines Boxes and Etc

From: "Sadowski, Allan" <allan.sadowski@ncshp.org>  
Date: Mon, 17 Apr 2000 17:37:18 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-78212-2000.04.17-16.37.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

An interesting thought... If you could have a LAT/LON and a sequence of vectors (length and direction) then it'd be a short notation for an object path... so tornado - hurricane paths could be displayed... hmmm interesting in the case of a hurricane if each segment equated to an hour in time...

Similarly, path of any moving object could be sent the same way... so folks could see the path of a balloon over 1 minute intervals... or a vehicle...

And, I could see some benefit in true tactical environments where intended paths were delineated in advance...

SCALE does not come into this particular capability... but it sure is a nice shorthand for previous and projected future paths of objects....

ALOHA  
AH6LS

```
> -----Original Message-----
> From: Bob Bruninga [SMTP:bruninga@nadn.navy.mil]
> Sent: Monday, April 17, 2000 5:20 PM
> To: APRS Spec Discussion List
> Cc: APRS Spec Discussion List
> Subject: [aprsspec] Re: Query Lines Boxes and Etc
>
> On Sat, 15 Apr 2000, Dale Huguley wrote:
>
> > 1. On page 47 of the draft- in Chapter 11- the chart shows Object
> types
> > 1 = line and 6 = colored line
> > Since you can define the color for all the types - whats
> the
> > difference between a colored line and a line with color? This makes
> sense
> > if 1= a line that needs to have its end down and to the right and 6=
> equals
> > a line that ends down and to the left. This means that a "corridor" can
> > only down and to the left. I can program around that if we are talking
> about
> > a rectangle- but not all watch boxes are rectangles. I now need to goto
> 4
> > lines to define a box- not extremely efficient.
>
> You are correct. Both are colored lines, but being linear one dimensional
> lines, there is no concept of "FILLED with color". But they DO have
> WIDTH.
>
> APRS can draw either of these lines at any angle and can then specify a
> line either side of that line. This matches the NWS descriptions
> perfectly of watch boxes extended X miles either side of a line between
> point A and point B. The format is noted in the spec to include the
> WIDTH parameter in the COMMENT field in BRACES as in {70} which would be
> 70 miles either side.
>
> APRSdos draws this as the original line from point A to point B and then
> an oblique rectangle box with the sides 70 miles to either side. The
> rectangle is drawn with dotted lines of the same color as the original
> line. The result is a RECTANGLE of any width or orientation.
>
> > 2. The last paragraph of Chapter 11 states that "Some stations
> transmit
> > Object reports without the " ; ' APRS data type Identifier. This format
> is
> > obsolete. Some software may still decode it, but this is not required."
> > Maybe so- but winAprs does not support it- so I will continue to output
> > objects without the semicolon until everyone goes over to this format.
> If
> > any software is not supporting "semicolonless" object I need to know so
> I
> > can put it out both ways.
>
> Are you sure? The format using ";" is the only current format. The
> format without the ";" was decided to be obsolete back in 1997. We first
> implemented it in 1995 with the Sprouls concurrence. APRSdos, and any of
> the kenwood products require the ";" and ignore the obsolete format.
>
> > 3. I cannot get winaprps to display any line.triangle,ellipse etc.-
> this
> > could be a problem with my parser- but I am following the Spec as I
> > understand it. However if there are programs that are currently
> supporting
> > the spec on area objects let me know and I will begin to output the
> watch
> > boxes.
>
> > 4. There is a crying need for a multipoint format for polygons- for
> > example: almost every tornado and severe thunderstorm warning has a
> polygon
> > that is the "Area of Maximum Concern" which is the area the radar
> computer
> > thinks is at greatest risk. How about a string of compressed lat/longs?
```

```

> > Actually the NWS has it fairly compressed already I E
> > LAT...LON 3669 9495 3651 9497 3651 9418 3676 9417
> > this is in degrees and hundredths
>
> Back in 95, I proposed a multipoint line drawing protocol and the Sprouls
> agreed. But neither of us got around to coding it. My format was
> scalable to any size. It included the LAT/LONG of the starting point and
> then a SCALE, and then a list of X/Y offsets for each of the points. Thus
> it could represent things as small as a few feet to as large as hundreds
> of miles. I can dig for it...
>
> By using an origin and base-91 offsets, then we could send polygons (or
> contiguous line segments with as many as 40 points in a single 100 byte
> packet.
>
> de WB4APR, BO
>
>
>
> ---
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```

## 77. [aprsspec] Re: Query Lines Boxes and Etc

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 17 Apr 2000 18:15:30 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-78215-2000.04.17-17.16.28--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

```

On Mon, 17 Apr 2000, Sadowski, Allan wrote:

```

> An interesting thought... If you could have a LAT/LON and a sequence of
> vectors (length and direction) then it'd be a short notation for an object
> path... so tornado - hurricane paths could be displayed... hmmm interesting
> in the case of a hurricane if each segment equated to an hour in time...

```

What I had originally proposed was before we began using BASE-91 characters and compressed format, so here is what I would propose today using the existing ITEM format (compressed).

```

)NAME!\yyyyxxxx)SSSxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxy
^^^^^^^^^^^^^^^^^^

```

WHERE this is just an ITEM named "NAME" in compressed format using the symbol characters of "\)" (This is a currently undefined SYMBOL). The YYYYYXXX is the starting point anywhere on the planet to the nearest foot.

The first 3 bytes in the COMMENT field for this ITEM is the SCALE in base 91, giving a scale anywhere from 1 foot to 142 miles (per line segment)

The remainder of the line are any number of pairs of X/Y offsets from each previous point. Each offset is a single base 91 number with anything above 45 being positive and below 45 being negative.

The result then can be any multifaceted shape from a small scale of about 1 foot per line segment up to an object 142 miles on a side.

NOTice that this is a completely legal ITEM. Its just that the SYMBOL (ICON) has this unique set of display rules...

de WB4APR.

Thus, I can transmit to you in ONE PACKET a complete MAP of the route from the nearest INTERSTATE to my front door in a single packet...

```

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```

## 78. [aprsspec] Re: Query Lines Boxes and Etc

From: "Sadowski, Allan" <allan.sadowski@ncshp.org>  
Date: Mon, 17 Apr 2000 20:48:34 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-78224-2000.04.17-19.48.42--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Bob

My problem with this is that as I understand your format... each segment is the same length... What I'm looking for is vectors... so azimuth and range... the vectors can change in length.... I have no interest in regular polygons... or having to try to fit regular line segments into a plane space where segments differ in length... are you familiar with the tactical term "spider routes" ? maybe that will help explain what I'm trying to reconcile your concept with... I could even live with the range portion of the vector being a log scale like muLaw is for telephone codecs...

Also... for the sake of internationalization... I'd whole lot prefer meters to be the base distance measurement... I keep tripping on your "feet"... pun intended....

Good try... and I guess what you present here has applicability... and since I'm not a coding guru.. we take what we get...

ALOHA  
AH6LS

```
> -----
> From: Bob Bruninga[SMTP:bruninga@nadn.navy.mil]
> Sent: Monday, 17 April, 2000 6:15 PM
> To: Sadowski, Allan
> Cc: APRS Spec Discussion List
> Subject: RE: [aprsspec] Re: Query Lines Boxes and Etc
>
> On Mon, 17 Apr 2000, Sadowski, Allan wrote:
>
> > An interesting thought... If you could have a LAT/LON and a sequence
> > of
> > vectors (length and direction) then it'd be a short notation for an
> > object
> > path... so tornado - hurricane paths could be displayed... hmmm
> > interesting
> > in the case of a hurricane if each segment equated to an hour in time...
>
>
> What I had originally proposed was before we began using BAsE-91
> characters and compressed format, so here is what I would propose today
> using the existing ITEM format (compressed).
>
>)NAME!\yyyyxxxx)SSSxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxy
> ^^^^^^^^^^^^^^^^^
>
> WHERE this is just an ITEM named "NAME" in compressed format using
> the symbol characters of "\)" (This is a currently undefined
> SYMBOL). The YYYYYXXX is the starting point anywhere on the
> planet to the nearest foot.
>
> The first 3 bytes in the COMMENT field for this ITEM is the
> SCALE in base 91, giving a scale anywhere from 1 foot to
> 142 miles (per line segment)
>
> The remainder of the line are any number of pairs of X/Y offsets
> from each previous point. Each offset is a single
> base 91 number with anything above 45 being positive and below
> 45 being negative.
>
> The result then can be any multifaceted shape from a small scale of
```

```

> about 1 foot per line segment up to an object 142 miles on a side.
>
> Notice that this is a completely legal ITEM. Its just that the SYMBOL
> (ICON) has this unique set of display rules...
>
> de WB4APR.
>
> Thus, I can transmit to you in ONE PACKET a complete MAP of the route from
> the nearest INTERSTATE to my front door in a single packet...
>
>
>

```

```

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```

## 79. [aprsspec] Re: Query Lines Boxes and Etc

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 17 Apr 2000 22:02:11 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-78278-2000.04.17-21.03.09--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

On Mon, 17 Apr 2000, Sadowski, Allan wrote:

```

> My problem with this is that as I understand your format... each segment is
> the same length... What I'm looking for is vectors... so azimuth and
> range...

```

No, each segment can be any length it takes to get from one point to the next point. The only thing that is specified is the location of the next point (in values of X and Y) from the current point.

bob

```

> > What I had originally proposed was before we began using BASe-91
> > characters and compressed format, so here is what I would propose today
> > using the existing ITEM format (compressed).
> >
> >)NAME!\yyyyxxxx)SS$xyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyxyx
> > ^^^^^^^^^^^^^^^^^^
> >
> > WHERE this is just an ITEM named "NAME" in compressed format using
> > the symbol characters of "\)" (This is a currently undefined
> > SYMBOL). The YYYXxxx is the starting point anywhere on the
> > planet to the nearest foot.
> >
> > The first 3 bytes in the COMMENT field for this ITEM is the
> > SCALE in base 91, giving a scale anywhere from 1 foot to
> > 142 miles (per line segment)
> >
> > The remainder of the line are any number of pairs of X/Y offsets
> > from each previous point. Each offset is a single
> > base 91 number with anything above 45 being positive and below
> > 45 being negative.
> >
> > The result then can be any multifaceted shape from a small scale of
> > about 1 foot per line segment up to an object 142 miles on a side.
> >
> > Notice that this is a completely legal ITEM. Its just that the SYMBOL
> > (ICON) has this unique set of display rules...
> >
> > de WB4APR.
> >
> > Thus, I can transmit to you in ONE PACKET a complete MAP of the route from
> > the nearest INTERSTATE to my front door in a single packet...
> >
> >
> >
>

```

APRSdos REPLY/COMMENT:

```

Reply mail addr: wb4apr@amsat.org
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html

```



See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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---

## 80. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 17 Apr 2000 22:23:24 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-78310-2000.04.18-00.24.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>  
>On Sat, 15 Apr 2000, Jim Wagner wrote:  
>  
>> My implementation of GUI-driven APRS, provisionally called "easyAPRS" will  
>> support compressed format. It will not transmit in compressed format, but  
>> will receive, decode, and display.  
>  
>I believe this is the state that the Xastir code was last in. I contributed  
>the decoder for the compressed format, but didn't write an encoder. I  
>assume we're talking about the YYYYXXXX format.  
>

easyAPRS will handle both YYYYXXXX format and Mic-E

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                              |                            |
|------------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>                 | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.U.S.A.NOAM">KA7EHK@KC7KFE.OR.U.S.A.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                       | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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---

## 81. [aprsspec] Re: Query Lines Boxes and Etc

From: "Dale Huguley" <[kg5qd@worldnet.att.net](mailto:kg5qd@worldnet.att.net)>  
Date: Tue, 18 Apr 2000 10:18:12 -0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-78359-2000.04.18-05.22.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All and Bob- Bob said-

>APRS can draw either of these lines at any angle and can then specify a  
>line either side of that line. This matches the NWS descriptions  
>perfectly of watch boxes extended X miles either side of a line between  
>point A and point B. The format is noted in the spec to include the  
>WIDTH parameter in the COMMENT field in BRACES as in {70} which would be  
>70 miles either side.  
>

I must be missing something- If the "corridor box" is defined as a point  
with a "down and to the left" offset- then what if you need a "down and to  
the right"? drawing it backwards would give you a negative up-down offset-  
The NWS gives you the lat/long for the corners of the box- this can be  
reliably parsed whereas I'm not so sure about finding the two reference  
points and converting from verbal to lat/long.

>  
>Are you sure? The format using ";" is the only current format. The  
>format without the ";" was decided to be obsolete back in 1997. We first  
>implemented it in 1995 with the Sprouls concurrence. APRSdos, and any of  
>the kenwood products require the ";" and ignore the obsolete format.

Yes I am sure I was wrong- works fine in Winaprs--

>Back in 95, I proposed a multipoint line drawing protocol and the Sprouls  
>agreed. But neither of us got around to coding it. My format was  
>scalable to any size. It included the LAT/LONG of the starting point and  
>then a SCALE, and then a list of X/Y offsets for each of the points. Thus  
>it could represent things as small as a few feet to as large as hundreds  
>of miles. I can dig for it...  
>  
>By using an origin and base-91 offsets, then we could send polygons (or  
>contiguous line segments with as many as 40 points in a single 100 byte  
>packet.

I like the concept of this- however the 140 mile limit for length of side  
would be cumbersome for watch boxes- could the scale be changed for some  
predefined watch box object?

Thanks for the help

73 de kg5qd Dale

---

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---

## 82. [aprsspec] Re: GUI that supports COMPRESSED FORMAT?

From: "Rob Wittner" <rmw@rwa-inc.com>  
Date: Tue, 18 Apr 2000 09:27:54 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-78375-2000.04.18-08.28.54--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

:-----Original Message-----

:[mailto:bounce-aprsspec-11697@lists.tapr.org]On Behalf Of Jeff King  
:Subject: [aprsspec] Re: GUI that supports COMPRESSED FORMAT?  
:  
:APRS/CE - ??  
:

APRS/CE - No, not yet... on the "To-Do" list

-Rob  
KZ5RW

---

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---

## 83. [aprsspec] Re: Query Lines Boxes and Etc

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 18 Apr 2000 10:20:45 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-78390-2000.04.18-09.21.50--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 18 Apr 2000, Dale Huguley wrote:

> >APRS can draw either of these lines at any angle and can then specify a  
> >line either side of that line. This matches the NWS descriptions  
> >perfectly of watch boxes extended X miles either side of a line between  
> >point A and point B. The format is noted in the spec to include the  
> >WIDTH parameter in the COMMENT field in BRACES as in {70} which would be  
> >70 miles either side.  
>  
> I must be missing something- If the "corridor box" is defined as a point  
> with a "down and to the left" offset- then what if you need a "down and to  
> the right"? drawing it backwards would give you a negative up-down offset-

APRS has two line OBJECTS. One is down and to the left. The other is  
down and to the right. From these two, we can draw a LINE at any angle  
anywhere. Then, if you put a WIDTH in the comment field, then APRS draws  
two additional parallel lines that width to either side and then connects  
the end points. The result is a rectangle of any size you want at any  
angle you want.

> The NWS gives you the lat/long for the corners of the box- this can be  
> reliably parsed whereas I'm not so sure about finding the two reference  
> points and converting from verbal to lat/long.

The above RECTANGLE is the way NWS used to report watch boxes. "in an area XX miles either side of a line between point A and B"... Their new method simply needs to be converted to that format. Simply take the midpoint between the 1st and 2nd points and let that be the OBJECT LAT/LONG (point "A". Then compute the midpoint between, the 3rd and 4th point, and that is the "point B" that you use to define the original line. Then compute the WIDTH of the box (the distance between the 1st and 2nd point divided by 2) and you have what you need to do any box with existing APRS...

> >By using an origin and base-91 offsets, then we could sent polygons (or  
> >contiguous line segments with as many as 40 points in a single 100 byte  
> >packet.  
>  
> I like the concept of this- however the 140 mile limit for length of side  
> would be cumbersome for watch boxes- could the scale be changed for some  
> predefined watch box object?

If you chose the 140 mile scale, then each segment could be any length from 3 miles to 140 miles in increments of 3 miles. If you need smaller boxes, then choose a smaller scale factor. If you need larger boxes, then define each side to be many segments. Say 3 segments each. Then your box could be 420 miles on a side accurate to about 9 miles.

I admit that going to multiple line segments on a side is cumbersome. How about if we defined the SSS scale factor to be in Meters. Then the range of scale would be from 3 feet to 420 miles before you would have to go to multiple segments.

I think everyone would prefer METERS anyway...

Bob, WB4APR

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## 84. [aprsspec] Re: Query Lines Boxes and Etc

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 18 Apr 2000 15:10:17 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-78428-2000.04.18-14.11.16--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 18 Apr 2000, Bob Bruninga wrote:

> > >By using an origin and base91 offsets, then we could send polygons(or  
> > >contiguous line segments with as many as 40 points in a single packet.  
  
> How about if we defined the SSS scale factor to be in Meters. Then  
> the range of scale would be from 3 feet to 420 miles before you would have  
> to go to multiple segments.

BETTER IDEA: The offsets and scale should all be done in terms of LAT/LONG (not meters) to avoid any complex spherical trig functions. If we let the units be in terms of .000001 degree of LAT/LONG, then we get approximately 1 meter precision. AND since this is just a "shape" then if we define the symbol character of "\)" to be a polygon then it can be transmitted in ANY existing APRS POSIT, OBJECT or ITEM report.

So the format would be:  
\* ANY POSIT, OBJECT or ITEM defines the origin of the polygon  
\* SYMBOL of "\)" indicates it will be a polygon  
\* Comment field format is then:

CSSSxyxyxyxyxyxyxy...

Where C is the color 0-15 (or 16-32 means FILL the polygon)  
SSS is the scale factor in units of .00001 degree of lat/long  
xy are offset pairs between each subsequent point

Thus the following comment field on an OBJECT located at 3847.04N 07710.53W could completely define the Washington DC BELTWAY:

```
+$<S2L8U6N=WBZGcRYR\UQaGyUUQ\CSINKTJOLQEWGOJMJPM?PEHIC
Where + is the color 10
!$< is for a scale factor of 300
S2L8U6.... is the beltway!
```

Another example would be that I could use that SYMBOL for my home station and the line segments could trace out a PATH from the nearest interstate exit to my front door... for when someone is visiting and looking for me for example...

de WB4APR, Bob

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## 85. [aprsspec] Re: Query Lines Boxes and Etc

From: "Dale Huguley" <[kg5qd@worldnet.att.net](mailto:kg5qd@worldnet.att.net)>  
Date: Tue, 18 Apr 2000 22:14:29 -0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-78483-2000.04.18-17.17.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi Bob and all-

I see my problem- I was going by the draft spec- according to it the only line object that has a "width" definable is a type "6" - down and to the left. If a type "1" can have a corridor then I can get there from here.

Bob Said-

>APRS has two line OBJECTS. One is down and to the left. The other is  
>down and to the right. From these two, we can draw a LINE at any angle  
>anywhere. Then, if you put a WIDTH in the comment field, then APRS draws  
>two additional parallel lines that width to either side and then connects  
>the end points. The result is a rectangle of any size you want at any  
>angle you want.

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## 86. [aprsspec] Re: ? SSID Path implementation.

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 20 Apr 2000 10:14:46 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-78814-2000.04.20-09.15.51--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I think you are testing the internal DIGI inside the D700?  
Yes, it will respond to the SSID routing and to DIRECTIONAL ROUTING...

Their are 4 paths for directional routing, NPATH,SPATH,EPATH,WPATH  
I am glad you are testing these.

Bob, WB4APR

But it would not surprise  
On Sat, 8 Apr 2000, Marco Savegnago wrote:

> Hello, I'm trying to understand the SSID Path routing method  
> as implemented in the TM-D700.  
>  
> There is not any digipeater in my area that implement the SSID Path  
> method for routing the UI frame with another firmware, I never found in  
> the APRS protocol specification how the method work exactly, and I want  
> to be sure that my observation is correct and this is how the protocol  
> must be implemented.  
>  
> First the SSID Path routine in the D700 must be enable with the

```

> command UISSID and digipeater ON.
>
> I've observed that when UISSID is ON the digipeater repeat all
> the UI frame addressed to ANY CALL with SSID > 0 (not only the mycall or
> other generic call) and repeat as follow:
>
> >From SSID > 0 and SSID < 8
>
> The frame will be repeated with the SSID of destination decremented by one
> and the call of the digipeater will be put in the via list.
>
> Example:
>
> A frame like this (MYCALL is IW3FQG and UNPROTO is APRS-6):
>
> IW3FQG>APRS-7:
>
> will be repeated to:
>
> IW3FQG>APRS-6, DIGI*:
>
> With SSID > 8 the translation rules is different because there is the
> direction rule.
>
> If SSID is equal to 8 (North direction)
>
> If the digipeater listen an UI frame addressed to ANY call with
> ssid = 8 it repeat the frame, put the SSID of destination to zero,
> put the digipeater callsign in the via list and attach to this if
> available the path for North direction (NPATh parameter in D700).
>
> Example:
>
> A frame like this (MYCALL is IW3FQG and UNPROTO is APRS-8, NPATh in the
> digi is set
> to NORTH):
>
> IW3FQG>APRS-8:
>
> will be repeated to:
>
> IW3FQG>APRS,DIGI*,NORTH:
>
> If SSID is equal to 12 (North direction)
>
> If the digipeater listen an UI frame addressed to ANY call with
> ssid = 12 it repeat the frame, put the SSID of destination the same as
> received,
> put the digipeater callsign in the via list and attach to this if
> available the path for North direction (NPATh parameter in D700).
>
> Example:
>
> A frame like this (MYCALL is IW3FQG and UNPROTO is APRS-12, NPATh in the
> digi is set
> to NORTH):
>
> IW3FQG>APRS-12:
>
> will be repeated to:
>
> IW3FQG>APRS-12,DIGI*,NORTH:
>
> The same rule is valid for South (SSID 9,13) East (10, 14) and West (11,
> 15).
>
> I've observed that in all cases if the frame is sent with a digipeater the
> via
> path (es: APRS-8 VIA DIGI) the frame is not repeated.
>
> IW3FQG>APRS-8,DIGI:
>
> Is not repeated by the digipeater.
>
> Do you know if all these rules are correct?
>
> Thanks in advance.
>
> Marco IW3FQG

```

```
>
> msave@tin.it
>
>
> ---
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
>
>
```

APRSDos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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---

## 87. [aprsspec] Re: ? SSID Path implementation.

From: "Marco Savegnago" <msave@tin.it>  
Date: Fri, 21 Apr 2000 08:16:46 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-78959-2000.04.21-01.16.31--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello Bob, thank you for the message, I'm testing the D700 features, and I've also implemented it in my digipeater TNC2 firmware named UIDIGI and now we are experimenting this routing methode in my local area (North East of Italy).

I never see any information in the APRS Protocol specification, so I've tried to understand the routing rules testing the D700.

Bye.

Marco IW3FQG

----- Original Message -----

From: Bob Bruninga <bruninga@nadn.navy.mil>  
To: Marco Savegnago <msave@tin.it>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Sent: Thursday, April 20, 2000 4:14 PM  
Subject: Re: [aprsspec] ? SSID Path implementation.

```
> I think you are testing the internal DIGI inside the D700?
> Yes, it will respond to the SSID routing and to DIRECTIONAL ROUTING...
>
> Their are 4 paths for directional routing, NPATH,SPATH,EPATH,WPATH
> I am glad you are testing these.
>
> Bob, WB4APR
>
>
>
```

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## 88. [aprsspec] Re: ? SSID Path implementation.

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 21 Apr 2000 08:58:28 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-78973-2000.04.21-07.59.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 21 Apr 2000, Marco Savegnago wrote:

```
> Hello Bob, thank you for the message, I'm testing the D700 features, and
```

> I've also implemented it in my digipeater TNC2 firmware named UIDIGI and now  
> we are experimenting this routing methode in my local area (North East of  
> Italy).  
> I never see any information in the APRS Protocol specification, so I've  
> tried to understand the routing rules testing the D700.  
k  
The original docs are in the README\DIGIS.TXT in all distributions of  
APRSdos...

bob

---

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---

## 89. [aprsspec] Re: [aprssig] Re: "Official" Programs

From: "Thomas M. Schaefer" <toms@inconnect.com>  
Date: Fri, 21 Apr 2000 10:04:24 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>,  
"APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-79015-2000.04.21-11.07.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

My sole point was that the term "official" program is not correct especially  
coming from Bob. I mentioned the WG simply because the WG (of which Bob is a  
founding member) is not supposed to call anything official. There are a  
bunch of windows program now and soon available, so calling anything  
"official" is wrong.

It would help if the WG clearly said, "No program has exclusive recommended  
or "official" status with the WG. All licensed programs are viewed equally.

I will give the benefit of the doubt and ASSUME that the "official" was a  
carry-over from the days when Bob closely controlled licensing for APRS  
programs. Those days are over, right? If anything is answered here, that  
question should be!

Tom NY4I  
----- Original Message -----  
From: "Jeff King" <jeff@aerodata.net>  
To: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>  
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>  
Sent: Thursday, April 20, 2000 5:07 PM  
Subject: [aprssig] Re: "Official" Programs

>  
>  
> Bob Bruninga wrote:  
>  
> > The LIST I referred to is the LIST. AND HAS NOTHING TO DO WITH THE SIG or  
> > THE WG!  
> >  
> > Forget it.  
>  
> Understood. Yet this does not detract from the validity of the points the  
fellow(s) raised. I take it  
> we are doing a Clinton here.  
>  
> Its forgotten.  
>  
> 73  
>  
> Jeff  
>  
>  
>  
> ---  
> You are currently subscribed to aprssig as: toms@inconnect.com  
> To unsubscribe send a blank email to leave-aprssig-10608E@lists.tapr.org  
>

---

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---

## 90. [aprrspec] Re: [aprrsig] Re: "Official" Programs

From: Steve Dimse <sdimse@netrox.net>  
Date: Fri, 21 Apr 2000 13:19:44 -0400  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: "TAPR APRS Special Interest Group" <aprrsig@lists.tapr.org>  
Message-ID: <LYR11589-79029-2000.04.21-12.20.52--lyris.aprrspec#tapr.org@lists.tapr.org>  
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As a reminder, I am no longer a member of the APRSWG, these comments are strictly my own...That said, I think this discussion is way out of line. Gee, imagine me with a strong opinion ;-)

I thought all the discussion last year had made the issues the APRS WG adressed clear, but either I was mistaken, or memory has faded over time.

>My sole point was that the term "official" program is not correct especially  
>coming from Bob. I mentioned the WG simply because the WG (of which Bob is a  
>founding member) is not supposed to call anything official. There are a  
>bunch of windows program now and soon available, so calling anything  
>"official" is wrong.  
>  
>It would help if the WG clearly said, "No program has exclusive recommended  
>or "official" status with the WG. All licensed programs are viewed equally.  
>  
>I will give the benefit of the doubt and ASSUME that the "official" was a  
>carry-over from the days when Bob closely controlled licensing for APRS  
>programs. Those days are over, right? If anything is answered here, that  
>question should be!

The Charter says exactly the opposite, that pre-existing deals are not affected by the formation of the APRS WG.

There are contracts between Bob and other authors that must be honored, the formation of the APRSWG does not change these legal documents. Indeed, the clause is in the charter specifically because of these contracts, the APRS WG could never have been formed without this clause.

No one ever said that all APRS versions are equal. Bob has a registered trademark on APRS. He can use this in any way he sees fit, and make any deals involving it he chooses.

My point in creating the hubbub last year at this time was never that Bob does not have a right to this trademark. He does, absolutely and totally, and I am completely behind this. You cannot use the term APRS without Bob's approval. To the best of my knowledge, he allows all developers that are not charging for their software to use it without charge, but he is under no obligation to do so. He is absolutely, legally free to call anything he chooses "the official APRS version".

What I objected to was that this trademark somehow applied to the protocol, or that the protocol could be copyrighted. Innovation and competition was being stifled without a legal basis in my opinion. This was my objection, and opening APRS development to all was what the APRSWG is about, not about stripping Bob of his legal rights to his trademark. The number of new software releases over the last year have been the result, and a very positive one. Just don't go trying to make the APRSWG more than it is...all versions of APRS-compatible software are not equal!

I can hear the objections now...this is ham radio, you can't (or its not right to) make money. Well, no one whines that Kenwood, Yaesu, et al make money, no one whines about AES or HRO. It always makes me mad that people think software is different. Just because the product is shipped by electrons alone (unlike Kenwood's products that require attached nuclei) does not change anything. Indeed, the failure of the public to recognize this has resulted in a new software copyright law that significantly impinges on all our freedoms. If you didn't know, those shrink wrap licenses are now legal, you do not own your software any longer, the manufacturer can force you to stop using it when they choose.) I choose not to charge for my software and services. That is a personal choice, which I am free to make, as are others. But I will defend to the death the rights of other software authors to choose a different path.

It was very traumatic getting the developers to agree to the concepts expressed in the APRS WG charter. Bob did not agree with my opinion that the protocol did not belong to him, and we both had gotten legal opinions that told us what we wanted to hear (big surprise!). Bob very graciously agreed not to press his claim, and to open development up. Please, don't try to strip him of property that is undeniably his, the APRS trademark.



Steve K4HG

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## 91. [aprsspec] Re: [aprssig] Re: "Official" Programs

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Fri, 21 Apr 2000 15:01:51 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>  
Message-ID: <LYR11589-79054-2000.04.21-14.02.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi Steve:

Thanks for the good review of last May's agreement. Your 100% correct, these things have been discussed before. However, I want to point out a fact that was missing. But first one point you raised.

Steve Dimse wrote:

> Please, don't  
> try to strip him of property that is undeniably his, the APRS trademark.

Did Thomas ever suggest this? Serious question, I didn't see this so maybe I missed it. I think he is confusing the APRS trademark with the term "APRS certified, which was promised, but has not yet been implemented. I don't think he is trying to deny the property of anyone, but is making a understandable mistake.

Now as to the history lesson, it appeared factually correct. Yet we have to visit this thing called "appearances" once again. When the WG was formed, it consisted of 2 TAPR reps, and all the APRS Bob licensed (past and present) authors. Neither the author of UI-View or XASTIR was asked to be on the WG. In fairness, this was brought up on the SIG at about that time, and it was explained away as neither of them had "asked" to be on the WG.... it had nothing to do with them not being a Bob approved author. OK, but I later found out that some authors on the WG were indeed recruited, so this "asking" thing kinda seemed a little hollow to me at the time.

Now fast forward to the future. With you leaving the WG, the only authors sitting on the WG still are Bob licensed APRS authors. I guess no-one asked, right? The "appearances" still are here, even though our choices of "unlicensed" APRS authors has increased 4 fold. In addition to XASTIR and UI-VIEW, we now have at least 10 other people writing APRS type code.

While no-one may have "asked" to join the WG, it might be best for appearances that the APRS-WG try and recruit a new member that has proven "OPEN SOURCE" type mindset to replace your departure. It could only benefit the long term growth of APRS.

In my eyes (and I'm NOT putting words in Thomas's mouth) this is how \*I\* read what Thomas posted. That the closed mindset still exists..... it was not a smoking gun, but just the general attitude of us vs. them. Maybe he read too much into it, but I think the point was valid in May of 1999 and is still valid today.

73

Jeff

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## 92. [aprsspec] Re: [aprssig] Re: "Official" Programs

From: Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Fri, 21 Apr 2000 15:56:54 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>  
Message-ID: <LYR11589-79066-2000.04.21-14.59.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/21/00 3:01 PM Jeff King ([jeff@aerodata.net](mailto:jeff@aerodata.net)) wrote:

>> Please, don't

>> try to strip him of property that is undeniably his, the APRS trademark.  
>  
>Did Thomas ever suggest this? Serious question, I didn't see this so maybe I  
>missed it. I think he is confusing the APRS trademark with the term "APRS  
>certified, which was promised, but has not yet been implemented. I don't  
>think he is trying to deny the property of anyone, but is making a  
>understandable  
>mistake.  
>  
If I may quote:

>On 4/20/00 5:41 PM Thomas M. Schaefer (toms@inconnect.com) wrote:  
>  
>>While I cannot concur that any program is the "real" implementation, I feel  
>>it is grossly inappropriate for anything to say the "official" version of  
>>any software.

I read tthis as saying that Bob has no right to call a program  
"official", which certainly implies that Bob does not own the term APRS.  
The "Official Windows APRS" label is something that is part of a contract  
that existed long before the APRS WG, saying Bob can't do it means  
voiding the contract, depriving Bob of the rights to his trademark as  
well as income from the licensing deal. This is wrong. The trademark is  
his to use as he sees fit!

>Now fast forward to the future. With you leaving the WG, the only authors  
>sitting on the  
>WG still are Bob licensed APRS authors.

TAPR is not a licensee of the APRS trademark, and it still has a seat on  
the APRS WG, currently occupied by Greg Jones.

Steve K4HG

---

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---

### 93. [aprsspec] Re: [aprssig] Re: "Official" Programs

From: Jeff King <jeff@aerodata.net>  
Date: Fri, 21 Apr 2000 16:46:32 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>,  
TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
Message-ID: <LYR11589-79089-2000.04.21-15.47.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Listen to what was being suggested. MINDSET.

Steve Dimse wrote:

> On 4/21/00 3:01 PM Jeff King (jeff@aerodata.net) wrote:  
>  
>> Please, don't  
>> try to strip him of property that is undeniably his, the APRS trademark.  
>>  
>>Did Thomas ever suggest this? Serious question, I didn't see this so maybe I  
>>missed it. I think he is confusing the APRS trademark with the term "APRS  
>>certified, which was promised, but has not yet been implemented. I don't  
>>think he is trying to deny the property of anyone, but is making a  
>>understandable  
>>mistake.  
>>  
>>  
> If I may quote:  
>  
>>On 4/20/00 5:41 PM Thomas M. Schaefer (toms@inconnect.com) wrote:  
>>  
>>>While I cannot concur that any program is the "real" implementation, I feel  
>>>it is grossly inappropriate for anything to say the "official" version of  
>>>any software.  
>>  
> I read tthis as saying that Bob has no right to call a program  
> "official", which certainly implies that Bob does not own the term APRS.  
> The "Official Windows APRS" label is something that is part of a contract  
> that existed long before the APRS WG, saying Bob can't do it means

I think the theme of his message was MINDSET. He never said "Official Windows  
APRS" he said "official".

My \*point\* was you could just as easily confuse "official" APRS-WG certified license with "official" APRS trademark. As the former has been promised, but not implemented, why are you so sure he is referring to the trademark?

He never mentioned trademark. Instead of both of us guessing, why don't we see what he says? Or maybe he is the only sane one among us and gave up long ago on this thread...

> >Now fast forward to the future. With you leaving the WG, the only authors  
> >sitting on the  
> >WG still are Bob licensed APRS authors.  
>  
> TAPR is not a licensee of the APRS trademark, and it still has a seat on  
> the APRS WG, currently occupied by Greg Jones.

And your point?

Yes, I am aware of this and stated it in my message (which you didn't quote). Greg Jones of TAPR brokered the formation of the APRS-WG. He and John Ackerman, also of TAPR, were given seats on the WG along with the other Bob licensed APRS authors.

But neither Greg nor John are APRS authors, licensed or otherwise (that I know of).

More to the point, would you care to comment on what I was saying, that we should encourage the APRS-WG to have non licensed APRS/OPEN SOURCE authors/types sit on it? I thought you would be supportive of this..... maybe not?

This really is going nowhere, nothing against you, but these things were beat on time and time again back in the May-June 1999 time frame. No one gives a damn, other than an incredibly small percentage of the TAPR membership, so I'm fooling myself if I think they do (I'm serious here).

Elvis has left the building. ;-)

73

Jeff

---

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---

## 94. [aprsspec] Re: [aprrsig] Re: "Official" Programs

From: Steve Dimse <sdimse@netrox.net>  
Date: Sat, 22 Apr 2000 08:36:48 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>,  
"TAPR APRS Special Interest Group" <aprrsig@lists.tapr.org>  
Message-ID: <LYR11589-79217-2000.04.22-07.38.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 4/21/00 4:46 PM Jeff King (jeff@aerodata.net) wrote:

>I think the theme of his message was MINDSET. He never said "Official Windows  
>APRS" he said "official".  
>

Bob said "Official Windows Version", which is what started all this flap...Tom simply shortened it to "official".

>My \*point\* was you could just as easily confuse "official" APRS-WG certified  
>license with "official" APRS trademark. As the former has been promised,  
>but not implemented, why are you so sure he is referring to the trademark?  
>

Please read the WG charter again. The certification committee of the WG issues an "APRS Certified" label. As of when I left the WG, none had been issued to any program. The word "official" only occurs once in the document, in a completely unrelated context. There is no "official" APRS-WG License, just the "APRS Certified (TM)" label. The "Official" designation is a pre-existing one, and must be honored under the terms of the APRSWG charter.

>More to the point, would you care to comment on what I was saying, that we  
>should  
>encourage the APRS-WG to have non licensed APRS/OPEN SOURCE authors/types  
>sit on it? I thought you would be supportive of this..... maybe not?

>  
When I left the APRS WG, I made a recommendation of people I thought would be appropriate to replace me, and I told several other people of that opinion as well. I did so in private, as is my right, and it is a topic I choose to continue to remain silent on publicly. I do not think it is my right as a resigning member to choose my successor, or to publicly campaign for anyone. It is up to the APRSWG to choose if, and who, to add to their roster in accordance with their charter.

Steve K4HG

---

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---

## 95. [aprsspec] Re: [aprssig] Re: "Official" Programs

From: John Ackermann <jra@febo.com>  
Date: Sun, 23 Apr 2000 17:50:25 -0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>, "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-79454-2000.04.23-16.53.09--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Tom, NY4I, wrote:

> My sole point was that the term "official" program is not correct especially  
> coming from Bob. I mentioned the WG simply because the WG (of which Bob is a  
> founding member) is not supposed to call anything official. There are a  
> bunch of windows program now and soon available, so calling anything  
> "official" is wrong.  
>  
> It would help if the WG clearly said, "No program has exclusive recommended  
> or "official" status with the WG. All licensed programs are viewed equally.  
>  
> I will give the benefit of the doubt and ASSUME that the "official" was a  
> carry-over from the days when Bob closely controlled licensing for APRS  
> programs. Those days are over, right? If anything is answered here, that  
> question should be!

Your take is pretty much correct. Bob's reference to WinAPRS as the "official" Windows version is related to the fact that it is the only one that he (Bob, not the WG) has licensed to use the APRS trademark, which Bob, not the Working Group, owns. That agreement was in effect long before the Working Group existed.

>From the WG's perspective, there is no "official" APRS version for any platform.

We hope that there will be a certification program that will allow developers to obtain an "APRS Certified" (or something similar) designation if their programs meet the requirements of the protocol spec. That program will be open to all comers and there could be many "APRS Certified" implementations for a given platform. But that certification trademark will be different from the right to use "APRS" in a product name, which Bob continues (rightfully) to control.

John N8UR  
jra@febo.com  
APRS Working Group Chairman

--  
John Ackermann N8UR  
Dayton, Ohio, USA  
jra@febo.com -- <http://www.febo.com>

-----BEGIN PGP PUBLIC KEY BLOCK-----  
Version: 2.6.3a

mQBtAzgI9hgAAEDAMiMQDZTVVuVIS0AscJ0Wy63oK4+Q5xvtxbX/ZoG1qC0uYDI  
Fph4/RqL9vVEItwBy6ISk+zbkATzPgy84nrI7+GBtld4F9DoHwARQXjC1I8cFZjY  
TSe16ffq0/balukLnQAfEbQlSm9obiBSLiBBY2tlcm1hbm4gTjhVUiA8anJhQGZl  
Ym8uY29tPokAdQMFEDgI9hjq0/balukLnQEBtYIC/AxJ2RqT0/9TqY8JGEkPx2sw  
+W5Z6Tu4UI654t9diGdCcIEPjOG1qUvvh2Xop0Yj9QGoM4NnHIw6qUSN5VH7hHKA  
bGnpuTxinuW/gKaI3bt2MC8QZQ0gy2de269071E2A==  
=UHWl  
-----END PGP PUBLIC KEY BLOCK-----

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## 96. [aprsspec] Re: [aprssig] Re: "Official" Programs

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 23 Apr 2000 22:45:46 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>, APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-79564-2000.04.23-21.52.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 23 Apr 2000, John Ackermann wrote:

<snip>

> certification trademark will be different from the right to use "APRS"  
> in a product name, which Bob continues (rightfully) to control.

And, which I might add is available for only a very modest small fee...  
for programs that work... <grin>  
:-)

Bob

---

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## 97. [aprsspec] An Offer

From: James Wagner <[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)>  
Date: Mon, 24 Apr 2000 09:31:14 -0700 (PDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-79680-2000.04.24-11.32.45--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, All...

As of late, there have been a number of suggestions that someone should fill Steve Dimse's position on the WG and that person should have an "open" orientation.

I would like to offer myself for that position. I have communicated with Bob and he appears to have little problem with my "application".

I am approaching this as a software author who is trying to bring into existence code based on the APRS standard. I have no allegiance to anyone's previous implementation nor any particular criticisms with any of them (other than the view that most are too complex to configure).

I would bring a pragmatic view to the WG. I tend to work as a bridge builder.

My own background is Electrical Engineering. I have a PhD from Colorado State (1971). I have worked at Tektronix designing oscilloscope plugins, at the College of Oceanography of Oregon State Univ. as an instrumentation engineer, and currently at Kalatel in Corvallis, OR, as an analog circuit designer and embedded processor programmer (8051 & AVR).

Non-professionally, I've enjoyed Macintosh computers and have done some Pascal, C, C++, and now visual-basic on that platform.

I've been a ham since about 1980 with a TechPlus most of that time. Packet has been my passion since getting that TechPlus. I have been involved in a variety of low-level networking protocol designs, professionally, and have been working with APRS for close to a year.

Most sincerely,  
Jim Wagner, KA7EHK  
Tangent, OR, USA

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## 98. [aprsspec] Re: An Offer

From: David VanHorn <[dvanhorn@cedar.net](mailto:dvanhorn@cedar.net)>  
Date: Mon, 24 Apr 2000 11:27:07 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-79682-2000.04.24-11.36.38--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----  
Hash: SHA1

>My own background is Electrical Engineering. I have a  
>PhD from Colorado State (1971). I have worked at Tektronix  
>designing oscilloscope plugins, at the College of Oceanography  
>of Oregon State Univ. as an instrumentation engineer, and  
>currently at Kalatel in Corvallis, OR, as an analog circuit  
>designer and embedded processor programmer (8051 & AVR).

An AVR head! You've got my vote :)

- - -

Are you an ISP? Tired of spam?  
[www.spamwhack.com](http://www.spamwhack.com) A pre-emptive strike against spam!

Where's Dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

-----BEGIN PGP SIGNATURE-----  
Version: PGPfreeware 6.5.2 for non-commercial use <<http://www.pgp.com>>

iQA/AwUB0QSR+4F1GDz116VWEQJyiQCgnYGVVGKL3xVn7vPxhS1bLy2hQ9wAoIre  
VihLUvLrjr502WhR1tL/D+Ie  
=zTu7  
-----END PGP SIGNATURE-----

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## 99. [aprsspec] Version 1

From: Cap Pennell <[cap@cruzio.com](mailto:cap@cruzio.com)>  
Date: Mon, 24 Apr 2000 11:06:04 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-79700-2000.04.24-13.14.29--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I'd like to see Version 1 of the protocol published ASAP. I know Ian is working hard on doing just that. I would hate to see that postponed or prolonged by any new dynamics within the WG. Version 1 is long overdue as is.

My suggestion is get Version 1 published first, get that done and out of the way, then the decks would be clear to focus on WG membership and other issues (like Version 2).

73, Cap KE6AFE

--

Cap Pennell  
Santa Cruz, CA 95062-1002            3658.93N/12200.91W [CM86xx]  
email: [cap@cruzio.com](mailto:cap@cruzio.com)    home page: <http://members.cruzio.com/~cap>  
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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## 100. [aprsspec] Re: Version 1

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Mon, 24 Apr 2000 19:32:53 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-79707-2000.04.24-13.40.21--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

In article <LYR14779-79700-2000.04.24-13.14.29--Ian.Wade#care4free.net@lists.tapr.org>, Cap Pennell <cap@cruzio.com> writes  
>I'd like to see Version 1 of the protocol published ASAP. I know Ian is  
>working hard on doing just that. I would hate to see that postponed or  
>prolonged by any new dynamics within the WG. Version 1 is long overdue as is.  
>  
>My suggestion is get Version 1 published first, get that done and out of  
>the way, then the decks would be clear to focus on WG membership and other  
>issues (like Version 2).

Hi Cap. The spec for Protocol Version 1.0 is almost complete, and the Working Group are now checking it out prior to public release.

With luck you will see it "Real Soon Now"!

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

--  
+-----+  
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |  
| email: g3nrw@arrl.net |  
| |  
| APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/Faprswg.html> |  
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## 101. [aprsspec] Open source APRS "clone" authors

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Mon, 24 Apr 2000 15:19:53 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-79711-2000.04.24-14.19.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

To my knowledge, these are the software authors of open source APRS type programs. None of them are presently are on the WG. Please add to this list if I missed anyone. Open source meaning that they publish the source code but most importantly encourage others to build on there work.

|          |                  |                                                           |
|----------|------------------|-----------------------------------------------------------|
| XASTIR   | Frank Giannan    | Full featured open source GUI for linux with i-gate       |
| APRSDIGI | Wes Johnston     | APRSDIGI for DOS                                          |
| HAMHUD   | Steve Bragg      | APRS display device with innovative map matching features |
| APRSD    | wa4dsy           | APRS i-gate for Linux, supports messaging                 |
| APRSMON  | Alan ?           | APRS digipeater for Linux                                 |
| GPS-E    | John Hansen      | APRS tracker (MIC-E clone) for PIC (C code)               |
| pice     | Byron Garrabrant | APRS tracker (MIC-E clone) for PIC (assembly)             |
| ram_digi | Mike Berg        | APRS digi on a PIC                                        |
| PIC_PALM | Mike Berg        | APRS receiver for PALM PILOT                              |
| U2K      | Steve Dimse      | APRS weather formatting program for PEET brothers         |
| JAVAAPRS | Steve Dimse      | JAVA APRS display applet                                  |

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## 102. [aprsspec] RE: Open source APRS "clone" authors

From: [pc@mds.com](mailto:pc@mds.com) (Alfred Lee, Mail List Account)  
Date: Mon, 24 Apr 2000 12:41:46 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-79713-2000.04.24-14.45.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All,

I have a code base for experimenting with APRS using HP200LX (XT DOS) and Baycom modem that I am willing to make public. However, I don't think there being too much interest in this kind of setup as I am not aware of any one else using my program since I published it. Some interesting info:

<http://www.geocities.com/CapeCanaveral/Hangar/9412/>  
<http://www.geocities.com/CapeCanaveral/Hangar/9412/airp/>  
<http://www.geocities.com/CapeCanaveral/Hangar/9412/airp/Airp1.htm>

Note: this program makes no attempt to comply with the APRS standard but only as an experimentation vehicle for accessing the APRS network.

Alfred

-----  
From: Jeff King[SMTP:jeff@aerodata.net]  
Sent: Monday, April 24, 2000 12:19 PM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Open source APRS "clone" authors

To my knowledge, these are the software authors of open source APRS type programs. None of them are presently are on the WG. Please add to this list if I missed anyone. Open source meaning that they publish the source code but most importantly encourage others to build on there work.

|          |                  |                                                           |
|----------|------------------|-----------------------------------------------------------|
| XASTIR   | Frank Giannan    | Full featured open source GUI for linux with i-gate       |
| APRSDIGI | Wes Johnston     | APRSDIGI for DOS                                          |
| HAMHUD   | Steve Bragg      | APRS display device with innovative map matching features |
| APRSD    | wa4dsy           | APRS i-gate for Linux, supports messaging                 |
| APRSMON  | Alan ?           | APRS digipeater for Linux                                 |
| GPS-E    | John Hansen      | APRS tracker (MIC-E clone) for PIC (C code)               |
| pice     | Byron Garrabrant | APRS tracker (MIC-E clone) for PIC (assembly)             |
| ram_digi | Mike Berg        | APRS digi on a PIC                                        |
| PIC_PALM | Mike Berg        | APRS receiver for PALM PILOT                              |
| U2K      | Steve Dimse      | APRS weather formatting program for PEET brothers         |
| JAVAAPRS | Steve Dimse      | JAVA APRS display applet                                  |

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### 103. [aprsspec] Re: Version 1

From: John Ackermann <jra@febo.com>  
Date: Mon, 24 Apr 2000 15:45:33 -0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>, jra@meow.febo.com  
Message-ID: <LYR11589-79714-2000.04.24-14.46.50--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Hi Cap and the gang --

I think the protocol spec is not far off, and I personally (not speaking for the WG) agree with you that it would be a mistake to make changes before that step is finalized. After the spec comes out, the WG will need to shift its thinking from documenting what is, to helping define what will be, and that will be the time to consider new members.

I hope that time will come very soon now, but I'd better let Ian speak for himself. :-)

John N8UR  
jra@febo.com

-----  
In message <LYR11592-79700-2000.04.24-13.14.29--n8ur#tapir.org@lists.tapir.org>, Cap Pennell writes:  
>I'd like to see Version 1 of the protocol published ASAP. I know Ian is  
>working hard on doing just that. I would hate to see that postponed or  
>prolonged by any new dynamics within the WG. Version 1 is long overdue as is.  
>  
>My suggestion is get Version 1 published first, get that done and out of  
>the way, then the decks would be clear to focus on WG membership and other  
>issues (like Version 2).  
>73, Cap KE6AFE  
>--



>Cap Pennell  
>Santa Cruz, CA 95062-1002 3658.93N/12200.91W [CM86xx]  
>email: cap@cruzio.com home page: <http://members.cruzio.com/~cap>  
>packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam  
>  
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#### 104. [aprsspec] Re: An Offer

From: "Steve Sampson" <ssampson@usa-site.net>  
Date: Mon, 24 Apr 2000 19:01:10 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-79750-2000.04.24-19.04.16--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I for one, second the nomination. Jim has been the guy who has asked the best questions of the current spec, pointed out the completely bogus, and I think the final specs will be better from his contributions.

I think we should be careful about how many PhD holders are in there though (I'm kidding!)

Steve/k5okc

----- Original Message -----

> I would like to offer myself for that position. I have  
> communicated with Bob and he appears to have little problem  
> with my "application".

---  
You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org  
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---

#### 105. [aprsspec] Wanted: telnet client

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Thu, 27 Apr 2000 07:38:33 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80246-2000.04.27-01.41.10--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

For testing some new APRS software, I need a Win95 telnet client that:

- a. will save all dialog to disk
- b. will not line wrap or truncate at 80 characters
- c. will not drop any non-printing ASCII characters in the range 0x00 to 0x7f.

Pointer(s) anyone?

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

--  
+-----+  
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |  
| email: g3nrw@arrl.net |  
| | |  
| APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/Faprswg.html> |  
+-----+

---  
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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

#### 106. [aprsspec] RE: Wanted: telnet client

From: "Rob Wittner" <rmw@rwa-inc.com>  
Date: Thu, 27 Apr 2000 08:49:41 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80269-2000.04.27-07.51.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

If I am not mistaken, HyperTerminal meets your requirements. However, I  
\*am\* talking about the Windows 98 version - I'm not sure if the Win95  
version has the telnet piece built-in. (I've used HT frequently to collect  
a data stream from APRServe to feed to APRS/CE. The vanilla Windows telnet  
client wraps at 80 columns, rendering a large part of the data stream  
useless - though I guess it is useful to see how to gracefully handle bad  
data.)

-Rob  
KZ5RW

:-----Original Message-----  
:From: bounce-aprsspec-11697@lists.tapr.org  
:[mailto:bounce-aprsspec-11697@lists.tapr.org]On Behalf Of Ian Wade  
:Sent: Thursday, April 27, 2000 2:39 AM  
:To: APRS Spec Discussion List  
:Subject: [aprsspec] Wanted: telnet client  
:  
:For testing some new APRS software, I need a Win95 telnet client that:  
:  
:a. will save all dialog to disk  
:  
:b. will not line wrap or truncate at 80 characters  
:  
:c. will not drop any non-printing ASCII characters in the range  
:0x00 to 0xff.  
:  
:Pointer(s) anyone?  
:  
:

---  
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---

## 107. [aprsspec] Compressed position reports

From: Roger Barker <roger@peaksys.co.uk>  
Date: Thu, 27 Apr 2000 14:18:22 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80273-2000.04.27-08.22.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

(I hope you folks don't mind a comment from an "unofficial" author ;-)

There is an obvious difference between the behaviour of ARPSTK and the  
APRS spec in terms of encoding/decoding compressed position reports.

The difference isn't great in absolute terms, but it is certainly highly  
significant in the context of the claim in the spec that an advantage of  
compression is "Improved position to 1 foot worldwide." The difference  
between decoding the same compressed posit according to the spec and  
decoding it in APRSTK using my location as the sample data is about one  
mile.

Is there an error in the spec? (I'm using aprs101g.pdf.)

--  
Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

---  
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---

## 108. [aprsspec] Re: Compressed position reports

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Thu, 27 Apr 2000 15:04:33 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80281-2000.04.27-09.26.05--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-80273-2000.04.27-08.22.26--Ian.Wade#care4free.net@lists.tapr.org>, Roger Barker <roger@peaksys.co.uk> writes  
>(I hope you folks don't mind a comment from an "unofficial" author ;-)  
>  
>There is an obvious difference between the behaviour of ARPSTK and the  
>APRS spec in terms of encoding/decoding compressed position reports.  
>  
>The difference isn't great in absolute terms, but it is certainly highly  
>significant in the context of the claim in the spec that an advantage of  
>compression is "Improved position to 1 foot worldwide." The difference  
>between decoding the same compressed posit according to the spec and  
>decoding it in APRSTK using my location as the sample data is about one  
>mile.  
>  
>Is there an error in the spec? (I'm using aprs101g.pdf.)  
>

Roger, could you please mail me the offending packet(s). I'll look into it.

Thanks.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

---  
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---

## 109. [aprsspec] RE: Wanted: telnet client

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Thu, 27 Apr 2000 15:13:00 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80282-2000.04.27-09.26.24--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-80269-2000.04.27-07.51.14--Ian.Wade#care4free.net@lists.tapr.org>, Rob Wittner <rmw@rwa-inc.com> writes  
>  
>If I am not mistaken, HyperTerminal meets your requirements. However, I  
>\*am\* talking about the Windows 98 version - I'm not sure if the Win95  
>version has the telnet piece built-in. (I've used HT frequently to collect  
>a data stream from APRServe to feed to APRS/CE. The vanilla Windows telnet  
>client wraps at 80 columns, rendering a large part of the data stream  
>useless - though I guess it is useful to see how to gracefully handle bad  
>data.)

That's exactly the problem Rob! I wrote a simple joinline program in Basic to join those lines which wrapped around at 80 characters -- the problem is, if a line is \*exactly\* 80 characters long (and many are) I then have to manually split the join I've just made. This is a veritable pain in the subroutines when you're handling a 14000 line file (as I was this morning...)

I'll look into Hyperterminal. Thanks Rob.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

---



---

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### 113. [aprsspec] Re: Compressed position reports

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 27 Apr 2000 13:08:17 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-80305-2000.04.27-12.12.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 27 Apr 2000, Roger Barker wrote:

> There is an obvious difference between the behaviour of ARPSTK and the  
> APRS spec in terms of encoding/decoding compressed position reports.  
> ... about one mile.

Good question. Or Could be in APRStk? How about sending us your  
posit data, and the posit generated by APRStk so we can see whats going  
on. Thanks. Wouldn't surprise me if a bug crept into the eastern  
hemisphere..

Here is a sample for my office position...

| LAT                | LONG | YYYYXXXX |
|--------------------|------|----------|
| -----              |      |          |
| 3859.11N/07629.11W | =>   | :h_!;/n! |

I hope thats what everyone else gets. All versions of APRS dos can  
display the compressed format of any location of the cursor. Just hit  
MAPS-PLOTS-FORMAT and it will display the YYYYXXXX value in the upper left  
corner.

Bob

---

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### 114. [aprsspec] Re: Compressed position reports

From: "Roger Barker" <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Thu, 27 Apr 2000 12:28:19  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-80308-2000.04.27-12.29.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 04/27/00, "Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>" wrote:

> On Thu, 27 Apr 2000, Roger Barker wrote:

>

> > There is an obvious difference between the behaviour of ARPSTK and the  
> > APRS spec in terms of encoding/decoding compressed position reports.  
> > ... about one mile.

>

> Good question. Or Could be in APRStk? How about sending us your  
> posit data, and the posit generated by APRStk so we can see whats going  
> on. Thanks. Wouldn't surprise me if a bug crept into the eastern  
> hemisphere..

>

> Here is a sample for my office position...

>

| LAT                | LONG | YYYYXXXX |
|--------------------|------|----------|
| -----              |      |          |
| 3859.11N/07629.11W | =>   | :h_!;/n! |

>

> I hope thats what everyone else gets. All versions of APRS dos can  
> display the compressed format of any location of the cursor. Just hit  
> MAPS-PLOTS-FORMAT and it will display the YYYYXXXX value in the upper left  
> corner.

(Hope this works! The server that hosts my domain is down and all my  
incoming email is being bounced, so I'm sending this from the TAPR web  
site.)

You don't really need the example for my location, because, if you feed the  
example compressed posit in the spec - 5L5L<+%A which is supposed to be

4930.00N, 7245.00W - into APRSTK, it decodes it as 4929.71N, 7244.23W.

If you input 4930.00N, 7245.00W as your lat and long in APRSTK, there is a similar difference when it encodes the posit. It transmits 5L!!<\*e!, which, when decoded according to the spec, is 4930.29N, 7245.78W.

Roger - G4IDE

---

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---

## 115. [aprsspec] Re: Compressed position reports

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Thu, 27 Apr 2000 20:49:50 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80374-2000.04.27-22.52.49--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80374-2000.04.27-22.52.49--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> You don't really need the example for my location, because, if you feed the  
> example compressed posit in the spec - 5L5L<+%A which is supposed to be  
> 4930.00N, 7245.00W - into APRSTK, it decodes it as 4929.71N, 7244.23W.  
>  
> If you input 4930.00N, 7245.00W as your lat and long in APRSTK, there is a  
> similar difference when it encodes the posit. It transmits 5L!!<\*e!, which,  
> when decoded according to the spec, is 4930.29N, 7245.78W.  
>  
> Roger - G4IDE

5L!!<\*e! decodes to 4930.00N, 7245.00W in APRS+SA.

APRS+SA decoder: 'NW' FmtLL " LLCompress '5L5L<+%A'  
N49°29.707' W72°44.223'  
APRS+SA decoder: 'NW' FmtLL " LLCompress '5L!!<\*e!'  
N49°30.000' W72°45.007'

Apparently, the spec is wrong.

Brent

---

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---

## 116. [aprsspec] Re: Compressed position reports

From: "Roger Barker" <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Fri, 28 Apr 2000 2:54:49  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80402-2000.04.28-02.56.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80402-2000.04.28-02.56.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 04/27/00, "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>" wrote:  
[snip]

>  
> Apparently, the spec is wrong.

So is anyone going to suggest in what way it's wrong? It only takes a few minutes to work through the example maths in the spec, so presumably it should be a simple task for someone to say where the error is...

---

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---

## 117. [aprsspec] Re: Compressed position reports

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Fri, 28 Apr 2000 12:36:05 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80411-2000.04.28-06.37.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80411-2000.04.28-06.37.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR14779-80402-2000.04.28-02.56.15--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-80402-2000.04.28-02.56.15--Ian.Wade#care4free.net@lists.tapr.org)>, Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)> writes  
>On 04/27/00, "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>" wrote:

```
>[snip]
>>
>> Apparently, the spec is wrong.
>
>So is anyone going to suggest in what way it's wrong? It only takes a few
>minutes to work through the example maths in the spec, so presumably it
>should be a simple task for someone to say where the error is...
>
```

I'm workin' on it as fast as I can pedal! By golly, you're a HARD taskmaster ..... :-))

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

---  
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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

## 118. [aprsspec] Re: Compressed position reports

From: Roger Barker <roger@peaksys.co.uk>  
Date: Fri, 28 Apr 2000 13:37:25 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80412-2000.04.28-07.39.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-80411-2000.04.28-06.37.24--roger#peaksys.co.uk@lists.tapr.org>, Ian Wade <Ian.Wade@care4free.net> writes  
>In article <LYR14779-80402-2000.04.28-02.56.15--Ian.Wade#care4free.net@lists.tapr.org>, Roger Barker <roger@peaksys.co.uk> writes  
>>On 04/27/00, "Brent Hildebrand" <bhildebrand@earthlink.net> wrote:  
>>[snip]  
>>>  
>>> Apparently, the spec is wrong.  
>>  
>>So is anyone going to suggest in what way it's wrong? It only takes a few  
>>minutes to work through the example maths in the spec, so presumably it  
>>should be a simple task for someone to say where the error is...  
>>  
>  
>I'm workin' on it as fast as I can pedal! By golly, you're a HARD  
>taskmaster ..... :-))

Ok, here's a little help! ;-)

The maths in the spec is logically correct, yet the result it gives has a small error compared to what is coming out of the "official" programs. There aren't too many ways that could happen with such a relatively simple calculation.

One obvious possibility is that the numbers 380972 and 190486 (which is 380972/2) are incorrect. Now if I change 380972 to 380927, I get almost the same answer as the "official" programs. There's still a small difference, but I have a good idea why that might occur.

So, I think a good starting point would be to find out whether the "official" programs are using 380972 or 380927...

--  
Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

## 119. [aprsspec] Re: Compressed position reports

From: Paul Breed <Paul@rasdoc.com>  
Date: Fri, 28 Apr 2000 08:53:04 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80413-2000.04.28-07.51.54--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I believe that this sort of function should include some sample code in the specification.

A pair of C functions, encode, and decode would be nice.  
This is how it is done in a lot of the RFC's (Internet standards)

Paul (K17JG)

---

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---

## 120. [aprsspec] Re: Compressed position reports

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 28 Apr 2000 09:49:51 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80418-2000.04.28-08.51.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 28 Apr 2000, Roger Barker wrote:

> > Apparently, the spec is wrong.  
>  
> So is anyone going to suggest in what way it's wrong? It only takes a few  
> minutes to work through the example maths in the spec, so presumably it  
> should be a simple task for someone to say where the error is...

I am up to my eyeballs in work and tonights Field-day at movie theaters across the country. Plus a million other things. Ill try to take a look soon..

bob

---

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---

## 121. [aprsspec] Re: Compressed position reports

From: Paul Keinanen <keinanen@sci.fi>  
Date: Fri, 28 Apr 2000 16:52:13 +0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: roger@peaksys.co.uk  
Message-ID: <LYR11589-80421-2000.04.28-08.54.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 28 Apr 2000 13:37:25 +0100, Roger Barker <roger@peaksys.co.uk> wrote:

>The maths in the spec is logically correct, yet the result it gives has  
>a small error compared to what is coming out of the "official" programs.  
>There aren't too many ways that could happen with such a relatively  
>simple calculation.

Without having the source code for the "official" programs, the small difference in the least significant digits makes me suspect that some part of the calculation has been done in (single precision) floating point, which has a precision of 6-7 digits. As a result, any digits after the 6th or 7th are useless.

If the result is to be displayed with 1/100 minute resolution, it would be natural to use an internal representation in which the 1/100 minute corresponds to an integer value of 1 (or 1.000 if someone insist on using floating point values). In a binary floating point representation, you can not express values like 2.01 exactly, but with plenty (1-3 bits) of extra resolution, the displayed value can be rounded and displayed correctly to two decimals.

Paul OH3LWR



---

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---

## 122. [aprsspec] Re: Compressed position reports

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 28 Apr 2000 10:22:44 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80425-2000.04.28-09.24.48--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80425-2000.04.28-09.24.48--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 28 Apr 2000, Roger Barker wrote:

> Ok, here's a little help! ;-)  
>  
> One obvious possibility is that the numbers 380972 and 190486 (which is  
> 380972/2) are incorrect. Now if I change 380972 to 380927, I get almost  
> the same answer as the "official" programs. There's still a small  
> difference, but I have a good idea why that might occur.

Maybe this will help...

The key numbers in my code are  $4186 * (90 - \text{LAT})$   
and  $2093 * (\text{LON} - 180)$

Where LAT and LONG are in decimal degrees. This gives the first 3 digits  
of the `YYY_XXX_` value. The last digit in X and Y are then just one 91th  
of the remainder.

Notice that if you divide 380972 by 91 you get 4186.5xxxx  
But we used instead 380926 which is the product of 4186 and 91

The reason for this was that positions to `YYY_XXX_` can all be done with  
single precision integers and get you to a pretty good accuracy of about  
100 feet worldwide (comparable to DD MM.HH) If you want to take the  
remainder and divide it by 91, then you can get precision down to about 1  
foot. But we did not want to burden Pic processors with double precision  
integers where positional accuracies to the nearest 100 feet were  
good enough..

Hope that helps...  
Bob

---

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---

## 123. [aprsspec] Compressed Posits: The spec IS wrong. Here's the fix

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Fri, 28 Apr 2000 18:10:26 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80457-2000.04.28-12.14.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80457-2000.04.28-12.14.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

As several people have commented, it turns out that the spec covering  
encoding/decoding of compressed posits is (slightly :-)) wrong.

Refer to page 32 of the APRS Protocol Spec, draft version 1.0.1g, dated  
3 December 1999 (at <http://www.tapr.org/tapr/html/Faprswg.html>).

In the "Lat/Long Encoding" section, the computations should be:

YYYY is  $380926 * (90 - \text{latitude})$   
XXXX is  $190463 * (180 + \text{longitude})$ .

In the "Lat/Long Decoding" section, the same big numbers are used as the  
divisors:

Lat =  $90 - ((\dots\dots\dots) / 380926)$   
Long =  $-180 + ((\dots\dots\dots) / 190463)$

Using these numbers, the examples computed by Bob Bruninga and Brent Hildebrand in other threads on this list match correctly.

The longitude encoding/decoding examples in the spec will obviously have to be reworked. For now, this is left as an exercise for the reader ... (and if you decide to have a go, please let me know what you get for the 4 ASCII characters for 72.75 deg W). Hopefully I will get the same!

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

---  
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## 124. [aprsspec] Re: Compressed position reports

From: Roger Barker <roger@peaksys.co.uk>  
Date: Fri, 28 Apr 2000 18:40:20 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80460-2000.04.28-12.42.13--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-80425-2000.04.28-09.24.48--roger#peaksys.co.uk@list  
s.tapr.org>, Bob Bruninga <bruninga@nadm.navy.mil> writes  
>On Fri, 28 Apr 2000, Roger Barker wrote:  
>  
>> Ok, here's a little help! ;-)  
>>  
>> One obvious possibility is that the numbers 380972 and 190486 (which is  
>> 380972/2) are incorrect. Now if I change 380972 to 380927, I get almost  
>> the same answer as the "official" programs. There's still a small  
>> difference, but I have a good idea why that might occur.  
>  
>Maybe this will help...  
>  
>The key numbers in my code are 4186 \* (90-LAT)  
>and 2093 \* (LON-180)  
>  
>Where LAT and LONG are in decimal degrees. This gives the first 3 digits  
>of the YYY\_XXX\_ value. The last digit in X and Y are then just one 91th  
>of the remainder.  
>  
>Notice that if you divide 380972 by 91 you get 4186.5xxxx  
>But we used instead 380926 which is the product of 4186 and 91  
>  
>The reason for this was that positions to YYY\_XXX\_ can all be done with  
>single precision integers and get you to a pretty good accuracy of about  
>100 feet worldwide (comparable to DD MM.HH) If you want to take the  
>remainder and divide it by 91, then you can get precision down to about 1  
>foot. But we did not want to burden Pic processors with double precision  
>integers where positional accuracies to the nearest 100 feet were  
>good enough..

So, presumably, all the APRS applications that could handle compressed posits at the time the spec was drawn up use your approximation? In that case, why does the spec not reflect that situation? I have seen it said enough times that the spec is supposed to be documenting the current situation. (That's a question to the WG in general, not specifically to Bob.)

If the same compressed posit is decoded by a program that uses the above approximation and one that faithfully follows the spec (including using sufficient precision to avoid intermediate rounding errors), the difference in position is about half a mile in the USA, and over a mile in some other parts of the world. That doesn't seem a very satisfactory situation when "Improved position to 1 foot worldwide" is claimed.

--  
Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>

For WinPack go to - <http://www.peaksys.co.uk>

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---

## 125. [aprsspec] Re: Compressed Posits: The spec IS wrong. Here's the fix

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 28 Apr 2000 14:41:42 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80478-2000.04.28-13.43.31--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80478-2000.04.28-13.43.31--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 28 Apr 2000, Ian Wade wrote:

> (and if you decide to have a go, please let me know what you get for the  
> 4 ASCII characters for 72.75 deg W). Hopefully I will get the same!

I get <\*e!

Also for your entertinament, you will notice that the SIGN of the math for longitude is backwards from what you might have expected. This was done early on so that all the English Language Swear words did not plot to locations in the middle of the USA...

I dont know where they ended up, but at least they aren't in our backyard... <grin>...

I could see the joy that APRS'ers would have driving circles around the point that produced the worst possible cursewords...

I think I moved them to the middle of the oceans...

bob, WB4APR

---

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---

## 126. [aprsspec] RE: Compressed Posits: The spec IS wrong. Here's the fix

From: Bill Diaz <[billdiaz@megsinet.net](mailto:billdiaz@megsinet.net)>  
Date: Fri, 28 Apr 2000 13:45:27 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80480-2000.04.28-13.47.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80480-2000.04.28-13.47.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Ian,

If it is not possible to rework the spec document to correct errors and ambiguities, could an error or erratta document be posted along with the APRS101g.pdg file?

Many of the document errors have been discussed on the sig, and corrections offered, but these are not readily available to those who may wish to use the document to write new, or to correct existing APRS applications.

Presently, the chapter 9 - Compressed Postion Report Data Formats, chapter 10 - Mic-E Format, and chapter 11 - Object and Item Reports seem to be causing the most confusion.

Bill KC9XG

On Friday, April 28, 2000 12:10 PM, Ian Wade [[SMTP:Ian.Wade@care4free.net](mailto:SMTP:Ian.Wade@care4free.net)] wrote:

> As several people have commented, it turns out that the spec covering  
> encoding/decoding of compressed posits is (slightly :-)) wrong.  
>  
> Refer to page 32 of the APRS Protocol Spec, draft version 1.0.1g, dated  
> 3 December 1999 (at <http://www.tapr.org/tapr/html/Faprswg.html>).  
>  
> In the "Lat/Long Encoding" section, the computations should be:  
>  
> YYYY is 380926 \* (90 - latitude)  
>

```

> XXXX is 190463 * (180 + longitude).
>
>
> In the "Lat/Long Decoding" section, the same big numbers are used as the
> divisors:
>
> Lat = 90 - ((.....) / 380926
>
> Long = -180 + ((.....) / 190463
>
>
> Using these numbers, the examples computed by Bob Bruninga and Brent
> Hildebrand in other threads on this list match correctly.
>
> The longitude encoding/decoding examples in the spec will obviously have
> to be reworked. For now, this is left as an exercise for the reader ...
> (and if you decide to have a go, please let me know what you get for the
> 4 ASCII characters for 72.75 deg W). Hopefully I will get the same!
>
> 73
> Ian, G3NRW
> Technical Editor, APRS Protocol Specification
>
> --
> +-----+
> | APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
> | email: g3nrw@arrrl.net |
> | |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
> +-----+
>
> ---
> You are currently subscribed to aprsspec as: billdiaz@megsinet.net
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## 127. [aprsspec] Re: Compressed position reports

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 28 Apr 2000 14:58:54 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80484-2000.04.28-14.01.02--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Gosh Roger. The spec was wrong. Thanks for bringing this up.  
We are so very sorry for any inconvenience we may have caused you...

But I would not be surprised if there are not other errors in the spec  
also. REMEMBER, it was written after the fact to document what is in  
APRSdos and the other programs. Thats over 40,000 lines of code in  
APRSdos alone that you are trying to duplicate.

I think the current process of finding errors and omissions in the  
after-the-fact documentation and correcting them is about the best we can  
do. Obviously you think there is a better way. Maybe you would share  
with us how you think we can do this better...

bob

On Fri, 28 Apr 2000, Roger Barker wrote:

```

> So, presumably, all the APRS applications that could handle compressed
> posits at the time the spec was drawn up use your approximation? In that
> case, why does the spec not reflect that situation? I have seen it said
> enough times that the spec is supposed to be documenting the current
> situation. (That's a question to the WG in general, not specifically to
> Bob.)
>
> If the same compressed posit is decoded by a program that uses the above
> approximation and one that faithfully follows the spec (including using
> sufficient precision to avoid intermediate rounding errors), the
> difference in position is about half a mile in the USA, and over a mile
> in some other parts of the world. That doesn't seem a very satisfactory
> situation when "Improved position to 1 foot worldwide" is claimed.
>
> --

```

> Roger Barker, G4IDE - roger@peaksys.co.uk  
> For UI-View go to - <http://www.packetradio.org.uk>  
> For WinPack go to - <http://www.peaksys.co.uk>  
>

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---

## 128. [aprsspec] RE: Compressed Posits: The spec IS wrong. Here's the fix

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Fri, 28 Apr 2000 20:29:34 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80489-2000.04.28-14.31.53--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80489-2000.04.28-14.31.53--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR14779-80480-2000.04.28-13.47.35--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-80480-2000.04.28-13.47.35--Ian.Wade#care4free.net@lists.tapr.org)>, Bill Diaz <[billdiaz@megsinet.net](mailto:billdiaz@megsinet.net)> writes

>Ian,

> If it is not possible to rework the spec document to correct errors  
>and ambiguities, could an error or erratta document be posted along  
>with the APRS101g.pdg file?

>

>Many of the document errors have been discussed on the sig, and  
>corrections offered, but these are not readily available to  
>those who may wish to use the document to write new, or to  
>correct existing APRS applications.

Point taken Bill. In fact, the Working Group now have in their possession the updated version of the spec, incorporating all the feedback from everyone since December.

Hopefully there are only a few minor tweaks outstanding, and they will sign it off for public distribution "real soon now".

I know it's been a long wait, but there was a \*lot\* of feedback on the last draft -- the hardcopies are in a folder 2 inches thick! Not only corrections, but also some hitherto obscurely documented features which somehow didn't find their way into the December draft.

Several chapters have been much expanded/re-written (notably the Mic-E chapter) to make things a lot clearer -- the whole document has grown a further 20 pages, and is now up to page 113.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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---

## 129. [aprsspec] Re: Compressed position reports

From: [csuprin@mitre.org](mailto:csuprin@mitre.org) (Charles Suprin)  
Date: Fri, 28 Apr 2000 15:40:53 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org) (APRS Spec Discussion List)  
Message-ID: <[LYR11589-80491-2000.04.28-14.42.18--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80491-2000.04.28-14.42.18--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

BTW is here a version of APRS dos and Winaprs and Mac APRS that are the versions version 1 of the standard is trying to match.

As time goes on What these applications do changes.

I just want to be confident that the spec is not trying to track a moving target.

Charles

---

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### 130. [aprsspec] Re: Compressed position reports

From: Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Fri, 28 Apr 2000 22:43:31 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80509-2000.04.28-16.47.06--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80509-2000.04.28-16.47.06--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR13460-80484-2000.04.28-14.01.02--roger#peaksys.co.uk@lists.tapr.org](mailto:LYR13460-80484-2000.04.28-14.01.02--roger#peaksys.co.uk@lists.tapr.org)>, Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes  
>Gosh Roger. The spec was wrong. Thanks for bringing this up.  
>We are so very sorry for any inconvenience we may have caused you...  
>  
>But I would not be surprised if there are not other errors in the spec  
>also. REMEMBER, it was written after the fact to document what is in  
>APRSdos and the other programs. Thats over 40,000 lines of code in  
>APRSdos alone that you are trying to duplicate.  
>  
>I think the current process of finding errors and omissions in the  
>after-the-fact documentation and correcting them is about the best we can  
>do. Obviously you think there is a better way. Maybe you would share  
>with us how you think we can do this better...

Well, in 20 years of writing software, I've never made a mistake, so I  
really don't know what you people are doing... ;-) )  
(for the humour-challenged, note smiley!) ^^

Sorry to have irritated you... I read your message as giving good  
reasons why you had chosen to do things differently to what the spec  
said, not as saying that there was an error in it. So I couldn't really  
understand why the spec didn't reflect your method. That was my only  
point. Obviously I misunderstood what you were saying.

[previous comments snipped]

--

Roger Barker, G4IDE - [roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

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### 131. [aprsspec] Re: Compressed position reports

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Fri, 28 Apr 2000 18:15:51 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80513-2000.04.28-17.18.08--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80513-2000.04.28-17.18.08--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob Bruninga wrote:

> Gosh Roger. The spec was wrong. Thanks for bringing this up.  
> We are so very sorry for any inconvenience we may have caused you...  
>  
> Obviously you think there is a better way. ..

One thought that immediately comes to mind is to invite him to join the  
APRS-WG. He is the author of a popular APRS program, just seems logical  
to me to have him in the WG from the start.

Yes, I know he has stated in the past he would not join, but more often then  
not a little sincere interest goes a long way in changing peoples minds.

-Jeff

--

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### 132. [aprsspec] Re: Compressed position reports

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Fri, 28 Apr 2000 15:40:20 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80521-2000.04.28-17.43.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Well, back on Email, and I see Bob has pointed out where the problem in the spec is and I'm sure Ian will correct it. The Spec shows the "best" that Base91 can do. Bob's modification to my algorithm was to fix some math problem he had. I did not like esthetically, but it is close enough. For testing purposes, Here are what the end points should calculate out to:

The algorithm as implemented on-air.  
0 0 => NN!NN!!  
S90 W180 => {{{!!!!  
N90 E180 => !!!!{!!!

The algorithm as noted in the Spec (and as originally proposed and now wrong)  
0 0 => NNNNNNNN  
S90 W180 => {{{{!!!!  
N90 E180 => !!!!{!!!

Nice symmetry. <sigh> :)

APRS+SA decodes it as encoded by APRSdos, but does not encode it, and I have no plan to encode it at this time.

Brent

> > You don't really need the example for my location, because, if you feed the  
> > example compressed posit in the spec - 5L5L<+%A which is supposed to be  
> > 4930.00N, 7245.00W - into APRSTK, it decodes it as 4929.71N, 7244.23W.  
> >  
> > If you input 4930.00N, 7245.00W as your lat and long in APRSTK, there is a  
> > similar difference when it encodes the posit. It transmits 5L!!<\*e!, which,  
> > when decoded according to the spec, is 4930.29N, 7245.78W.  
> >  
> > Roger - G4IDE  
>  
> 5L!!<\*e! decodes to 4930.00N, 7245.00W in APRS+SA.  
>  
> APRS+SA decoder: 'NW' FmtLL " LLCompress '5L5L<+%A'  
> N49°29.707' W72°44.223'  
> APRS+SA decoder: 'NW' FmtLL " LLCompress '5L!!<\*e!'  
> N49°30.000' W72°45.007'  
>  
> Apparently, the spec is wrong.  
>  
> Brent  
>  
>  
>  
> ---  
> You are currently subscribed to aprsspec as: bhildebrand@earthlink.net  
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org  
>  
>

---

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

### 133. [aprsspec] Re: Compressed position reports

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Sat, 29 Apr 2000 15:37:40 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80622-2000.04.29-09.41.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-80521-2000.04.28-17.43.36--Ian.Wade#care4free.net@list  
s.tapr.org>, Brent Hildebrand <bhildebrand@earthlink.net> writes  
>Well, back on Email, and I see Bob has pointed out where the problem in the spec  
>is and I'm sure Ian will correct it.

That is now done, as I detailed in another thread yesterday.

```
>For testing purposes, Here are what the end points should calculate out to:
>
>The algorithm as implemented on-air.
>0 0 => NN!!NN!!
>S90 W180 => {{!!!!!!
>N90 E180 => !!!!{!!
>
```

I confirm that using the new encode/decode constants (380926 and 190463) these character strings are correct.

That is, the next (RSN) release of the spec will agree with existing on-air data.

[Also, following Bob's decision to make western longitudes negative to avoid rude words, I can confirm that the 8-character compressed posit "rudeword" is close to the Balleny Islands in the Ross Sea, Antarctica, and that "RUDEWORD" is at the north end of Lake Malawi in East Africa ...]

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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### 134. [aprsspec] Re: Compressed position reports

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 29 Apr 2000 14:16:09 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80661-2000.04.29-13.18.16--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 28 Apr 2000, Roger Barker wrote:

```
> Sorry to have irritated you... I read your message as giving good
> reasons why you had chosen to do things differently to what the spec
> said, not as saying that there was an error in it. So I couldn't really
> understand why the spec didn't reflect your method. That was my only
> point. Obviously I misunderstood what you were saying.
```

My appologies too. I was at the end of a very long day and behind on everything I was committed to. Was trying to answer all the mail.. Now things are back to their normal frenzied pace.

So please feel free to speak up when anything built by the spec doesn't match APRSdos. Such discrepanceis do need to be addressed. The point that the spec is an after the fact condensation of my 800K of readme files which themselves are a 2nd order documentation of the code is a mechanism that may miss some details.

de WB4APR, Bob

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### 135. [aprsspec] RELAY defaults.

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 29 Apr 2000 14:26:00 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80664-2000.04.29-13.27.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain



Authors,

Actually, I may be the source of this problem. If you are using my INITxxx.TNC files in your distributions, then that is why your software is not initializing TNC's MYALIAS to RELAY. Since APRSdos code itself does the MYALIAS RELAY, this means that the INITxxx.TNC files DO NOT..

Thus if you relied on them to do most of the default initializations, then this explains why your stations are not getting configured to RELAY. May I suggest that you insert the line

MYALIAS RELAY in all of your INITxxx.TNC files

and in the INITKAN.TNC that you include

UIDIGI ON RELAY

Thanks. This simple change will restore the fundamental RELAY structure throughout APRSdom. Notice that this issue is independent of the arguments for and against having the RELAY ALIAS at DIGIS... That is a separate subject and should not affect our defaults of RELAY at all home stations. Thanks

Bob

---

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### 136. [aprsspec] Re: Compressed position reports

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 29 Apr 2000 14:41:31 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80666-2000.04.29-13.43.18--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80666-2000.04.29-13.43.18--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 28 Apr 2000, Brent Hildebrand wrote:

> I see Bob has pointed out where the problem in the spec is and I'm sure  
> Ian will correct it. The Spec shows the "best" that Base91 can do.  
> Bob's modification to my algorithm was to fix some math problem he had.  
> I did not like esthetically, but it is close enough.  
>  
> The algorithm as noted in the Spec (and as originally proposed and now wrong)

No, thats not historically correct. Brent proposed a variety of base 91 system that got hammered down to a YYYYXX system. We all implemented it for testing. But Steve made the good point that it just needed more precision. We added one more byte that included 3 bits of additional precision in Y and 4 more bits precision in X. Thus we had a YYZXXX format. But then after intense arguments we arrived at the more CLEAN YYYYXXXX format that gave 1 foot everywhere and used identical parsing and processing for both X and Y.

Since YYYYXX could be done with single precision and YYYYXXXX required double precision integers we all agreed at the time to simply change the mathematical constant from 380972 to 380926 to allow for this vastly simpler implementation on PIC processors. There is nothing intelligent about this. In fact, it is very elegant.

de WB4APR, Bob

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### 137. [aprsspec] LEAVE-APRSSPEC-11602B@LISTS.TAPR.ORG

From: kf4chg <[kf4chg@atlantic.net](mailto:kf4chg@atlantic.net)>  
Date: Sat, 29 Apr 2000 15:06:17 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-80670-2000.04.29-14.08.52--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80670-2000.04.29-14.08.52--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

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### 138. [aprsspec] x-no-archive "compression"

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 29 Apr 2000 20:05:08 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
Message-ID: <LYR11589-80706-2000.04.29-19.06.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

> Concerning the SECURITY issue, I still think that Steve has both an  
> excellent system and also has included the necessary disabling structure  
> in his "x-no-archive" capability.  
>  
> My only request is that we shorten this substantially. With only 20 bytes  
> in the D7 STATUS line, I dont like taking up 60% of them with the above  
> flag.  
>  
> Can anyone come up with something better than the !no% that was previously  
> suggested as a shorter way to say the same thing?

First of all, you need to understand you are talking two distinct issues. FINDU's protocol, and what is actually sent over the air. I see little reason to mess with FINDU, its already doing what its supposed to do, and anyways its on the internet with no radio ports. The x-no-archive:yes is an accepted standard on the internet already.

In the compressed format there are two unused bits and in the MIC-E format I believe there are also unused bits. Why not just use them for the archive function? The various RF gateway programs could then expand them in a format that FINDU accepts.

In this way you have a 0% increase in the size of your frame sent over the air.

I think routing issues need to be address in the next cut of the APRS protocol, this would address some of the privacy concerns being raised, but more importantly make a real routable protocol. This is having your cake and eating it too. But that's for another discussion.

-Jeff

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### 139. [aprsspec] Proper use of position ambiguity?

From: Jeff King <jeff@aerodata.net>  
Date: Sat, 29 Apr 2000 20:27:33 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80714-2000.04.29-19.28.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> None of this is necessary. APRS allows for position ambiguity. The  
> KENWOODS allow position ambiguity. If you want to be ambiguous, use this  
> feature. I would rather see an ambiguous position which is clearly  
> marked as such than seeing purposefully WRONG posits...

This suggestion concerns me. There was a heated discussion regarding the need for position ambiguity on APRSSPEC some time ago, yet I never saw this "use" of it mentioned. More to the point, for those of you who are familiar with robotic navigation, the "ambiguity" itself can express information. That is, how good are your sensors. You use this level of ambiguity to weight your decisions when doing sensor fusion and/or Kalman filtering.

Now I see someone suggesting we use it to hide our true location. This is a entirely separate issue from the FINDU discussion that prompted this suggestion. Its one thing making data readily available to anyone on the internet, its a complete other one purposely putting that data in error on purpose. The problem here is this ambiguity can no longer be modeled, its really random!

Its my opinion, based on my experience in robotic navigation, that this suggested use of position ambiguity is a poor idea.... its not even position ambiguity!! Better to have a flag to set for no archive, or better yet, work on a real routable protocol then to yet again kludge up the protocol.

This is not strictly a academic discussion either, the use of \*accurate\* position ambiguity in DF work is important also. Sounds like a oxymoron ("accurate ambiguity"), but I assure its not. You need to know the accuracy of your sensors to be able to use the data properly.

For those of you interested in robotic navigation, here is a interesting text available on the internet entitled: Where am I?" -- Systems and Methods for Mobile Robot Positioning at: <http://www-personal.engin.umich.edu/~johannb/position.htm>  
There is a short section at the end on Kalman filters.

-Jeff

---

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## 140. [aprsspec] Newbie

From: Donald Tambeau <[ve3hol@rac.ca](mailto:ve3hol@rac.ca)>  
Date: Sat, 29 Apr 2000 23:40:43 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-80728-2000.04.29-20.41.54--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello ..

I am new to the list and new to APRS. I have a registered copy of Dos APRS. I have this loaded on my home computer and I can also run mobile with a dual port computer and a Garwin gps. I have captured a history map of some of the major streets of the City of Timmins and would like to give a demo of this exciting mode at our general meeting in a few weeks from now. I have used Mapfix40 and this history file to make a map. I can load the map in the window version of APRS but I cannot find a way to insert my Timmins map in the Dos Version. I do not wish to change anything in the Ontario Maps. I just want to be able to display a basic map of our area while a mobile unit circles the surrounding. We will gladly submit maps of our area to be added to the zipped database. We just want a quick fix for the upcoming meeting. Thank you.  
Don VE3HOL

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## 141. [aprsspec] Re: x-no-archive "compression"

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 30 Apr 2000 09:19:59 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>  
Message-ID: <LYR11589-80785-2000.04.30-08.21.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 29 Apr 2000, Jeff King wrote:

> Bob Bruninga wrote:  
> > Concerning the SECURITY issue, I still think that Steve has both an  
> > excellent system and also has included the necessary disabling structure  
> > in his "x-no-archive" capability.  
> >  
> > My only request is that we shorten this substantially.  
> > Can anyone come up with something better than the !no% that was previously  
> > suggested as a shorter way to say the same thing?  
> >  
> The x-no-archive:yes is an accepted standard on the internet already.

So? They have infinite bandwidth. This is HAM radio on a 1200 baud channel. Where every byte counts. putting "x-no-archive" in every packet

on the air is a tremendous hog of our precious bandwidth..  
>  
> In the compressed format there are two unused bits and in the MIC-E format  
> I believe there are also unused bits. Why not just use them.

Because there are thousands of Mic-E's and THD7's and D700's that will never be changed to allow for this...

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## 142. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 30 Apr 2000 10:16:45 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>, aprsspec@lists.tapr.org  
Message-ID: <LYR11589-80794-2000.04.30-09.20.05--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

There is clearly a misunderstanding of APRS position ambiguity below, which I will try to correct:

On Sat, 29 Apr 2000, Jeff King wrote about Bob's statement that position ambiguity built into APRS can be used to mask exact positions:

> This suggestion concerns me.... for those of you who are familiar with  
> robotic navigation... That is, how good are your sensors....  
> Now I see someone suggesting we use it to hide our true location... a  
> separate issue from the FINDU discussion that prompted this suggestion.  
> Its my opinion, based on my experience in robotic navigation, that this  
> position ambiguity is a poor idea.... its not even position ambiguity!!

"Position ambiguity" in APRS has nothing to do with the Jeff's example... Position ambiguity in APRS means the same thing as we learn in Highschool math. And that is that there is a difference between the following representations of a position: (or any measurable quantity)

|            |     |                                                      |
|------------|-----|------------------------------------------------------|
| 38 59.13 N | ... | is a latitude known to a precision of about 60 feet  |
| 38 59.1 N  | ... | is a latitude known to a precision of about 0.1 mile |
| 38 59 N    | ... | is a latitude known to a precision of about 1 mile   |
| 38 N       | ... | is a latitude known to a precision of about 60 miles |

The DESIGN of APRS included the ability to PRESERVE these POSITION AMBIGUITYS from the SENDER to the RECEIVER, so that there could be NO MISINTERPRETATION of the data on receipt.

But some authors refused to support this fundamental concept in their implementations of APRS. Thus, some programs will convert, record and display ALL OF THE ABOVE positions exactly the same at the location of 38 00.00 Whis is just plain wrong.

So, even if someone does not know the hundredths of a minute details of his positions, even if he only enters it as 3859N and 7629W, those programs will show him at exactly 3859.00N and 7629.00W with no indication that this position was ambiguous in the first place.

In APRSdos and WinAPRS and any others that support position ambiguity, these station ICONS will look just like anyone else. UNTIL you zoom in below the point where the precision no longer exists. At that point, the ICON is replaced with a CIRCLE with a radius of the ambiguity. Thus you UNMISTAKENLY can see that the station is somewhere within that circle and you are NOT MISSED that he is exactly where his ICOM may fall..

In my opinion, we MUST preserve END-TO-END meaning of positions and that includes the display on RECEIPT of the lack of precision that was INCLUDED by the SENDER. To do otherwise UNDERMINES the integrity of APRS.

de WB4APR, Bob

Now, then, that is why you can use position ambiguity to show what neighborhood you live in, but to remain completely ambiguous as to which house you live in.

Or in the case of the THD7 HT, it allows you to enter a manual position showing that you are visiting in Atlanta, without having to have the GPS plugged in. APRSdos will display any THD7 posit ending in .00/.00 with an

ambiguity circle of 1 mile. Thus someone seeing your THD7 at the Atlanta Airport for example, does not waste precious time driving to exactly XXXX.00/XXXXX.00 and getting frustrated because he cannot find you there...

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### 143. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Sun, 30 Apr 2000 08:16:43 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-80800-2000.04.30-10.18.45--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Or in the case of the THD7 HT, it allows you to enter a manual position  
> showign that you are visiting in Atlanta, without having to have the GPS  
> plugged in. APRSdos will display any THD7 posit ending in .00/.00 wti h an  
> ambiguity circle of 1 mile. Thus someone seeing your THD7 at the Atlanta  
> AIrport for example, does not waste precious time driving to exactly  
> XXXX.00/XXXXX.00 and getting frustrated because he cannot find you  
> there...

Does the D700 work differently than the D7? On the D700, Position ambiguity only affect Latitude.

1 digit: XXXX.X0/XXXXX.XX  
2 digit: XXXX.00/XXXXX.XX  
3 digit: XXX0.00/XXXXX.XX  
4 digit: XX00.00/XXXXX.XX

Just demonstrated this again right now. I believe I've pointed this out before.

The ambiguity with 1 digit, is just about ziltch. And someone who thinks they are being ambiguous with 1 digit, is fooling themselves. At least with 2 digits, you will have a minute of ambiguity. On the D700, this is only in Latitude; you KNOW the Longitude. Call it a bug if you wish, but there are a lot of D700 out there now. Do we tell them, hey, you are not as ambiguous as you think!

How about on your D700? Does it work right?

How about in APRSdos? Do you display the ambiguity correctly?? It should only be a line, not a circle.

At least with "regular" APRS packets, the ambiguity is well defined, with spaces in the Lat/Long. The ambiguity in other Mic-E and compressed is more ambiguous.

Brent

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### 144. [aprsspec] Re: x-no-archive "compression"

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Sun, 30 Apr 2000 10:19:30 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "TAPR APRS Special Interest Group" <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>  
Message-ID: <LYR11589-80802-2000.04.30-10.23.05--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I think this is one that has to be worked out with the author.  
Mr. Dimse can probably do anything you want, or he may take the same position as Kenwood and the others and not want to modify anything. In any case, there's nothing the user community can do except use what is programmed in.

Work it out and let us know what all the authors decide.

----- Original Message -----

> > The x-no-archive:yes is an accepted standard on the internet already.  
>  
> So? They have infinite bandwidth. This is HAM radio on a 1200 baud  
> channel. Where every byte counts. putting "x-no-archive" in every packet  
> on the air is a tremendous hog of our precious bandwidth..

> >  
> > In the compressed format there are two unused bits and in the MIC-E format  
> > I believe there are also unused bits. Why not just use them.  
>  
> Because there are thousands of Mic-E's and THD7's and D700's that will  
> never be changed to allow for this...

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## 145. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Sun, 30 Apr 2000 14:33:05 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: TAPR APRS Special Interest Group <[aprssig@lists.tapr.org](mailto:aprssig@lists.tapr.org)>, [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-80844-2000.04.30-13.35.54--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-80844-2000.04.30-13.35.54--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob Bruninga wrote:

> There is clearly a misunderstanding of APRS position ambiguity below,  
> which I will try to correct:

Yes, there is.

> "Position ambiguity" in APRS has nothing to do with the Jeff's example...

Of course it does, if it has the same thing to do with what we learned in high school chemistry class.

> Position ambiguity in APRS means the same thing as we learn in Highschool  
> math.

I think you meant high school chemistry or physics. But it all boiled down to math anyways.

Your 100% correct. Which was my point. The "high school" example had to do with the accuracy of your sensors, in this case a weight balance, pipette, thermometer or whatever. If you were using a number of measurements together, then the known precision of measurement, or ambiguity would be cumulative and would be used in your calculations. While you knew you never got a "exact" measurement, you knew a range that the measurement was in. And it could be accurately modeled. This would be analogous to a range circle in APRS derived from S/A or from the GPS DOP.

Now, the analogy of the way you are suggesting using ambiguity is if your high school chemistry teacher walked around class putting his thumb on the scale while you were taking measurements. Yes, you know the measurement is wrong, but just how wrong we no longer know. The measurements now are useless as the level of ambiguity is no longer repeatable as it was before. Further, the factor introducing the ambiguity is no longer trying to get it as close as possible, but is trying to deceive. This is the fundamental difference you do not understand and two completely different uses of the "\_" field.

What your trying to do with "position ambiguity" could be better described as position munging and has nothing to do with the precision of measurement.

Which is fine, just call it what it is. This is more a debate of semantics anyways.

-Jeff

P.S. Here are some postings made on the APRSSPEC list about 4 months ago. Never a mention from you of position concealing and everyone seemed to understand the high school math/chemistry example then.

<http://www.tapr.org/tapr/list-archive/aprsspec/9912/msg00147.html>  
<http://www.tapr.org/tapr/list-archive/aprsspec/9912/msg00129.html>  
<http://www.tapr.org/tapr/list-archive/aprsspec/9912/msg00140.html>

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## 146. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Bob Bruninga <bruninga@nadm.navy.mil>  
Date: Sun, 30 Apr 2000 16:00:43 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-80859-2000.04.30-15.02.11--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Sun, 30 Apr 2000, Brent Hildebrand wrote:

> Does the D700 work differently than the D7?  
> On the D700, Position ambiguity only affect Latitude.  
> 1 digit: XXXX.X0/XXXXX.XX  
> 2 digit: XXXX.00/XXXXX.XX  
> 3 digit: XXX0.00/XXXXX.XX  
> 4 digit: XX00.00/XXXXX.XX

In order to encode position ambiguity in the Mic-E format there were available bits in the code space of the LATITUDE bits. Thus, we encoded the 4 levels of ambiguity in the LATITUDE. But again these are BITS that are DEFINED to be AMBIGUITY. They are ambiguity CIRCLES by definition.

The above decodings are incorrect in that they are inserting "0's" in the decoding, again, inserting precision where precision was not intended. The proper decoding of a Mic-E packet with ambiguity should insert spaces in those digit positions.

> How about in APRSdos? Do you display the ambiguity correctly??

Yes, AMBIGUITY is defined at 4 levels of 0.1, 1, 10 and 60 miles. These are circles of ambiguity in both Latitude and Longitude. This is by definition. But it is only necessary to encode this in the LATITUDE information to have it apply. Receiving software should handle it appropriately...

de WB4APR, Bob

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---

## 147. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Sun, 30 Apr 2000 13:53:35 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-80867-2000.04.30-15.55.12--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Bob - you did not even address the issue. The D700 does it wrong. APRSdos thus displays it wrong.

> On Sun, 30 Apr 2000, Brent Hildebrand wrote:  
>  
> > Does the D700 work differently than the D7?  
> > On the D700, Position ambiguity only affect Latitude.  
> > 1 digit: XXXX.X0/XXXXX.XX  
> > 2 digit: XXXX.00/XXXXX.XX  
> > 3 digit: XXX0.00/XXXXX.XX  
> > 4 digit: XX00.00/XXXXX.XX  
>  
> In order to encode position ambiguity in the Mic-E format there were  
> available bits in the code space of the LATITUDE bits. Thus, we encoded  
> the 4 levels of ambiguity in the LATITUDE. But again these are BITS that  
> are DEFINED to be AMBIGUITY. They are ambiguity CIRCLES by definition.  
>  
> The above decodings are incorrect in that they are inserting "0's" in the  
> decoding, again, inserting precision where precision was not intended.  
> The proper decoding of a Mic-E packet with ambiguity should insert  
> spaces in those digit positions.  
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> > How about in APRSdos? Do you display the ambiguity correctly??  
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> Yes, AMBIGUITY is defined at 4 levels of 0.1, 1, 10 and 60 miles. These  
> are circles of ambiguity in both Latitude and Longitude. This is by

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> definition. But it is only necessary to encode this in the LATITUDE
> information to have it apply. Receiving software should handle it
> appropriately...
>
> de WB4APR, Bob
>
>
>
> ---
> You are currently subscribed to aprsspec as: bhildebrand@earthlink.net
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
>
>

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```

## 148. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sun, 30 Apr 2000 19:50:36 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-80883-2000.04.30-18.52.11--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

On Sun, 30 Apr 2000, Brent Hildebrand wrote:

```

> Bob - you did not even address the issue. The D700 does it wrong.
> APRSdos thus displays it wrong.

```

No, the D700 does it right and my APRSdos displays it correctly as an ambiguous circle of radius 1 mile when I select POS AMBIGUITY of 2 digits on the D700.

Your example below makes no sense since it includes many "00"'s. If position ambiguity is enabled on the D&00 (WHich transmits in Mic-E format), then there are no "00's" in the positions you imply.

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> >
> >
> >
>

```



APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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---

## 149. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Sun, 30 Apr 2000 17:01:55 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80886-2000.04.30-19.06.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

OK OK PUT \_ in for zeros. The D700 send the REAL Longitude. Even with 4 digit "ambiguity". Decode it yourself. People need to know that only the Latitude is it rounded off only, not the Longitude, and I still say, APRSdos is NOT telling the truth. Decode the data yourself.

End of thread.

> On Sun, 30 Apr 2000, Brent Hildebrand wrote:  
>  
> > Bob - you did not even address the issue. The D700 does it wrong.  
> > APRSdos thus displays it wrong.  
>  
> No, the D700 does it right and my APRSdos displays it  
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> POS AMBIGUITY of 2 digits on the D700.  
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> > >  
> > >  
> > > ---  
> > > You are currently subscribed to aprsspec as: bhildebrand@earthlink.net  
> > > To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org  
> > >  
> > >

```

> >
> >
>
> APRSdos REPLY/COMMENT:
>
> Reply mail addr: wb4apr@amsat.org
> US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
> See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html
> See Maryland APRS LIVE: http://web.usna.navy.mil/~bruninga/aprs.html
> See GPS on ANY radio: http://www.tapr.org/tapr/html/mic-e.html
>
>
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```

## 150. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sun, 30 Apr 2000 20:30:52 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-80901-2000.04.30-19.32.32--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

On Sun, 30 Apr 2000, Brent Hildebrand wrote:

```

> OK OK PUT _ in for zeros. The D700 send the REAL Longitude. Even with
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> say, APRSdos is NOT telling the truth. Decode the data yourself.

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Sorry brent, I did address your issue. I agreed with you that the BITS for indicating the 4 LEVELS of ambiguity are encoded ONLY in the LATITUDE bits. I further expalined that POSITION AMBIGUITY is "\*defined\*" to be a "circle" of ambiguity, even though the BITS used to encode it are only passed in the MIC-E format via the LATITUDE bytes.

APRSdos displays this as an ambiguity circle no matter what the least significant bits of Longityude imply. I hope this helps. OH... I see, yes the LSB of longitude does come through on the positions LIST. I should fix that. It should be masked to the same degree as the latitude. Thanks..

Bob

```

The receiving software is supposed to apply > > > On Sun, 30 Apr 2000,
Brent Hildebrand wrote: > >
> > > Bob - you did not even address the issue. The D700 does it wrong.
> > > APRSdos thus displays it wrong.
> >

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> > > > Yes, AMBIGUITY is defined at 4 levels of 0.1, 1, 10 and 60 miles. These
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> > > ---
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> > > To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
> > >
> > >
> > >
> >
> >
> > APRSdos REPLY/COMMENT:
> >
> > Reply mail addr: wb4apr@amsat.org
> > US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
> > See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html
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## 151. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

```

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sun, 30 Apr 2000 17:58:42 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-80907-2000.04.30-20.00.25--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

It is more than comes through the position list. IT IS TRANSMITTED. IF you are going to transmit ambiguous positions, DO NOT TRANSMIT THE REAL POSITION. I still hold that the D700 has a bug, in that it transmits the REAL LONGITUDE. It should have been rounded. It is not. Thus, the D700 does NOT have a circle of ambiguity, it has a LINE of ambiguity. And to say otherwise, is misleading to the users.

```

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> > > >  
> > > >  
> > > > ---  
> > > > You are currently subscribed to aprsspec as: bhildebrand@earthlink.net  
> > > > > To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org  
> > > >  
> > > >  
> > > >  
> > > >  
> > > > APRSdos REPLY/COMMENT:  
> > >  
> > > Reply mail addr: wb4apr@amsat.org  
> > > US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
> > > See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
> > > See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
> > > See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>  
> > >  
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> > > ---  
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> > >  
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>  
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> ---  
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> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org  
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>

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---

## 152. [aprsspec] Re: [aprssig] Re: Findu and security?

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 30 Apr 2000 21:03:31 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
Message-ID: <LYR11589-80908-2000.04.30-20.03.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob Bruninga wrote:

> On Mon, 1 May 2000, Hamish Moffatt wrote:  
> >  
> > OK. But this doesn't change my comment. If my real position is  
> > 3859.00N, transmitted as 3859. N, when my position changes to 3858.99N,  
> > it will be transmitted as 3858. N. So at that point in time, my  
> > exact latitude is effectively known (because of the jump), despite  
> > the ambiguity.  
>  
> Depends on your software. I would think that such software would round  
> numbers instead of truncate them... But that is an implementation issue  
> for the author...

\_ONLY\_ if its a display issue. IF the position is going to be passed on, you have to have a consistent, known method of dealing with the data. I've tried making this point before in the past, and its really a certification issue if the data is being munged and passed on. It has to be munged in the exact same manner by every program in the path.

This may not have been what you were referring to, but we do need to make it clear the authors only have latitude to do things as they please with end user applications. Any transport mechanisms must have a consistent method of handling data.

-Jeff

---  
You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org  
To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

---

## 153. [aprsspec] x-no-archive "compression" and the Kenwood factor

From: Jeff King <jeff@aerodata.net>  
Date: Sun, 30 Apr 2000 21:24:26 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>,  
TAPR APRS Special Interest Group <aprssig@lists.tapr.org>  
Message-ID: <LYR11589-80911-2000.04.30-20.24.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob:

I am at a loss here. First you ask:

Bob Bruninga wrote:

> I would hope in the long term that we can come up with a shorter  
> representation. We have been striving for years to make APRS packets

> shorter.. and are actually making some progress. Here are some examples:  
>W4WW>APRS-4,=/yyyyxxxx>CST <= Compressed

Clearly, you put some time into making the compressed format small. But then later you state:

> This is HAM radio on a 1200 baud  
> channel. Where every byte counts. putting "x-no-archive" in every packet  
> on the air is a tremendous hog of our precious bandwidth..  
> > Jeff King said:  
> > In the compressed format there are two unused bits and in the MIC-E format  
> > I believe there are also unused bits. Why not just use them.  
>  
> Because there are thousands of Mic-E's and THD7's and D700's that will  
> never be changed to allow for this...

If this is how you felt to begin with, why even pose the question? You either want progress, or you don't. Steve Dimse's modifications would allow some backwards compatibility with no need to cripple your compressed format until the MIC-E's and Kenwoods could have there firmware updated. Its a win-win.

What are your plans for those two unused bits in the compressed format? Seems like a good fit both to exclude internet routing and logging/archiving with a \_0%\_ increase in bandwidth. In the solution you want to stay with, your looking at adding 56 bits to the compressed format, a \_54%\_ increase in its size!

Oh, you say backwards compatibility? Again, you asked a question, and a suggestion was offered. Just because a old piece of equipment won't support something new, is no reason not to make things better. Progress does not imply the old can't work, nor that we should not improve what we have. The old can still use the "x-no-ar" format until if and when they update.

So, here is what I am suggesting again. In the compressed format, we use the two unused bits in "COMPRESS TYPE" (T) field. As an example, bit 7 could be set to indicated "no-archive-x" which would indicate the users desire not to have their data archived, and bit 6 set could indicate the users desire not to have their packets passed to the internet (APRSERVE).

In this way, instead of a 56% increase in the frame size, we get a 0% increase in frame size.

Now, on to the Kenwood factor. Has it not come to anyones attention that we had a major radio manufacture release a APRS device without the SPEC even being finalized? As such, I really \*DON'T\* see why we are so willing to bend over backwards for them. Worst case, they do a firmware upgrade, something us owners of TNC2's have been doing for years. And with the Kenwood, you don't even have to know how to pull the chip out of the socket..... its on flash.

And as to the owners of the MIC-E, since that is your company Bob, what would be required there? Why can it never be changed?

Also, since this question was posted to the APRS-WG, and deals with Kenwood, I think something needs to be said. Kenwood has given radios to a number of APRS authors... no one has hidden this fact from anyone and this really is a good thing as it both benefits the author and gets Kenwoods equipment integrated in display apps. The authors most certainly deserve it.

But, as some of these same authors site on the APRS-WG and can make decisions that could benefit or hurt Kenwood (like having to upgrade the firmware), its really important these decisions be based on technical merits. I'm not alone in feeling this way, and would hope anyone on the WG that has a finiacial arrangement with Kenwood, be it money or equipment donations, might consider reclusing themselves from any votes on the WG that would affect Kenwood. I'm \*not\* saying anyone is doing anything improper, but sometimes appearances are important in a standards body. So before anyone blows up at me, please consider this.

73

Jeff

>  
>  
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---

# May 2000

Original source file: aprsspec.0005

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssid/aprsspec/mail\\_archive/aprsspec.0005](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprsspec/mail_archive/aprsspec.0005)

## 1. [aprsspec] Re: [aprssid] Proper use of position ambiguity?

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Mon, 1 May 2000 06:20:33 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80953-2000.05.01-00.23.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-80883-2000.04.30-18.52.11--Ian.Wade#care4free.net@lists.tapr.org>, Bob Bruninga <bruninga@nadn.navy.mil> writes  
>On Sun, 30 Apr 2000, Brent Hildebrand wrote:  
>  
>> Bob - you did not even address the issue. The D700 does it wrong.  
>> APRSdos thus displays it wrong.  
>  
>No, the D700 does it right and my APRSdos displays it  
>correctly as an ambiguous circle of radius 1 mile when I select  
>POS AMBIGUITY of 2 digits on the D700.  
>

In other words:

1. It is only necessary to specify the ambiguity in the latitude.
2. Any display/reporting program should assume that the same level of ambiguity applies to the longitude as well.
3. Because of #2 above, it doesn't matter whether the longitude is transmitted with or without ambiguity.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrrl.net |
| | |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
+-----+
```

---  
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## 2. [aprsspec] Re: [aprssid] Proper use of position ambiguity?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 1 May 2000 08:41:47 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-80995-2000.05.01-07.45.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 1 May 2000, Ian Wade wrote:

- > In other words:  
>  
> 1. It is only necessary to specify the ambiguity in the latitude.  
>  
> 2. Any display/reporting program should assume that the same level of  
> ambiguity applies to the longitude as well.  
>  
> 3. Because of #2 above, it doesn't matter whether the longitude is  
> transmitted with or without ambiguity.

Yes. In the past the focus on "ambiguity" was to make sure that all authors "displayed" the ambiguity to the end user so that there could be no misunderstanding in interpretation of a position. We were making no attempt to hide any extraneous precision, because the ambiguity flags were saying the position was ambiguous so it didn't matter.

What Brent has pointed out, in light of the interest in "security", is



that APRSdos is capturing the actual data too, so the use of "ambiguity" as a "security" feature is not perfect. I will fix this. All I simply have to do is mask out the digits in the LONGITUDE to match the number of digits of ambiguity in the LATITUDE. But this is done on "receipt" so everyone else will probably have to take a look at how they do it too on receipt.

bob

---

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---

### 3. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Mon, 1 May 2000 06:21:11 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-81002-2000.05.01-08.25.46--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-81002-2000.05.01-08.25.46--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

----- Original Message -----

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
To: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Sent: Sunday, April 30, 2000 10:20 PM  
Subject: [aprsspec] Re: [aprssig] Proper use of position ambiguity?

> In article <[LYR14779-80883-2000.04.30-18.52.11--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-80883-2000.04.30-18.52.11--Ian.Wade#care4free.net@lists.tapr.org)>, Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes  
> > On Sun, 30 Apr 2000, Brent Hildebrand wrote:  
> >  
> >> Bob - you did not even address the issue. The D700 does it wrong.  
> >> APRSdos thus displays it wrong.  
> >  
> > No, the D700 does it right and my APRSdos displays it  
> > correctly as an ambiguous circle of radius 1 mile when I select  
> > POS AMBIGUITY of 2 digits on the D700.  
> >  
> >  
> In other words:  
> >  
> 1. It is only necessary to specify the ambiguity in the latitude.  
> >  
> 2. Any display/reporting program should assume that the same level of  
> > ambiguity applies to the longitude as well.  
> >  
> 3. Because of #2 above, it doesn't matter whether the longitude is  
> > transmitted with or without ambiguity.  
> >  
> 73  
> Ian, G3NRW  
> Technical Editor, APRS Protocol Specification  
> >

But this is misleading to the user who thinks they are sending an truly ambiguous position. The D700 is NOT. It transmits the real Longitude. The bits in the Mic-E may have been in the Latitude, but the Longitude could have been rounded before transmission just like the Latitude is rounded. Then the same number of significant digits would have been transmitted for both. But it is not. If this is added to the Spec, then the whole concept of Ambiguity becomes a farce. If any program represents a station as transmitting an ambiguous position when in fact, part of the position is well known, then this is a misrepresentation of the facts.

---

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### 4. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Mon, 1 May 2000 06:24:16 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-81003-2000.05.01-08.26.17--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-81003-2000.05.01-08.26.17--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> Yes. In the past the focus on "ambiguity" was to make sure that all  
> authors "displayed" the ambiguity to the end user so that there could be  
> no misunderstanding in interpretation of a position. We were making no  
> attempt to hide any extraneous precision, because the ambiguity flags were  
> saying the position was ambiguous so it didn't matter.  
>  
> What Brent has pointed out, in light of the interest in "security", is  
> that APRSdos is capturing the actual data too, so the use of "ambiguity"  
> as a "security" feature is not perfect. I will fix this. All I simply  
> have to do is mask out the digits in the LONGITUDE to match the number of  
> digits of ambiguity in the LATITUDE. But this is done on "receipt" so  
> everyone else will probably have to take a look at how they do it too on  
> receipt.  
>  
> bob

I see, we can call ambiguity - DECEPTION ON RECEPTION.

Brent

---

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## 5. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 1 May 2000 09:57:40 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-81009-2000.05.01-08.59.08--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-81009-2000.05.01-08.59.08--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 1 May 2000, Brent Hildebrand wrote:

> > No, the D700 does it right and my APRSdos displays it  
> > correctly as an ambiguous circle of radius 1 mile when I select  
> > POS AMBIGUITY of 2 digits on the D700.  
> >  
> But this is misleading to the user who thinks they are sending an truly  
> ambiguous position. The D700 is NOT. It transmits the real Longitude.  
> The bits in the Mic-E may have been in the Latitude, but the Longitude  
> could have been rounded before transmission just like the Latitude is  
> rounded. Then the same number of significant digits would have been  
> transmitted for both. But it is not. If this is added tot he Spec,  
> then the whole concept of Ambiguity becomes a farce. If any program  
> represents a station as transmitting an ambiguous position when in  
> fact, part of the position is well known, then this is a  
> misrepresentation of the facts.

Brent, you are still confusing the issues of POSITION AMBIGUITY with  
"SECURITY". Position AMBIGUITY has NOTHING TO DO WITH SECURITY.

Yes, I have confused the issue by bringing up "ambiguity" as a means for  
users to provide some measure of ambiguity in their position if they did  
not want it desiminated worldwide by FINDU. But your point is well taken  
that we should not INFER security with AMBIGUITY.

The SPEC as written, The Mic-E protocol, and the Kenwood D700 are all  
consistent and work as designed with position ambiguity. Leave it alone.  
If there is any reference to "security" in the SPEC, the KENWOOD docs or  
the Mic-E docs, then Brent is correct that it is not and should be  
corrected.

But your statement that position ambiguity is a "farce" is unfounded.

SECURITY in APRS, I agree, can be considered a "farce" and I hope we do  
not imply it anywhere... Thanks for noting this...

de WB4APR, Bob

---

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## 6. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Tim Salo <salo@networkcs.com>  
Date: Mon, 1 May 2000 09:00:25 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-81011-2000.05.01-09.02.09--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

> Date: Mon, 1 May 2000 06:20:33 +0100  
> From: Ian Wade <Ian.Wade@care4free.net>  
> Subject: [aprsspec] Re: [aprssig] Proper use of position ambiguity?  
>  
> On Sun, 30 Apr 2000, Brent Hildebrand wrote:  
> >  
> >> Bob - you did not even address the issue. The D700 does it wrong.  
> >> APRSdos thus displays it wrong.  
> >  
> >No, the D700 does it right and my APRSdos displays it  
> >correctly as an ambiguous circle of radius 1 mile when I select  
> >POS AMBIGUITY of 2 digits on the D700.  
> >  
> In other words:  
> >  
> 1. It is only necessary to specify the ambiguity in the latitude.  
> >  
> 2. Any display/reporting program should assume that the same level of  
> ambiguity applies to the longitude as well.  
> >  
> 3. Because of #2 above, it doesn't matter whether the longitude is  
> transmitted with or without ambiguity.

And, if you send me your login password, I promise that my client software won't look at it...

How likely are we to see APRS display programs that provide good guesses of the location of a station with this feature enabled (based on knowing the longitude and the history of the changes in the latitude)?

I suggest that it makes more sense to admit the limitations of this scheme, rather than to make overly broad claims about the security it provides.

-tjs

---

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---

## 7. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 1 May 2000 10:10:00 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-81017-2000.05.01-09.12.11--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Mon, 1 May 2000, Tim Salo wrote:

> I suggest that it makes more sense to admit the limitations of this  
> scheme, rather than to make overly broad claims about the security it  
> provides.

True, position ambiguity was not designed as a security measure. My apologies if I have confused anyone...

de WB4APR,Bob

---

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## 8. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Mon, 1 May 2000 17:08:48 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-81047-2000.05.01-11.10.46--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

In article <LYR14779-81011-2000.05.01-09.02.09--Ian.Wade#care4free.net@lists.tapr.org>, Tim Salo <salo@networkcs.com> writes

>  
>I suggest that it makes more sense to admit the limitations of this  
>scheme, rather than to make overly broad claims about the security it  
>provides.

Tim, I didn't say anything about security. Neither does the spec say anything about security.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
+-----+
```

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## 9. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Mon, 1 May 2000 09:40:50 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81055-2000.05.01-11.40.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
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The Spec:  
Position Ambiguity Where the exact position is not known, the mm and hh digits in the latitude and longitude may be progressively replaced by a V (space) character as the amount of imprecision increases. For example:  
07201.7\_W represents longitude to nearest 1/10th of a minute.  
07201.\_W represents longitude to nearest minute.  
0720\_.\_W represents longitude to nearest 10 minutes.  
072\_\_.\_W represents longitude to nearest degree.

The D700 case: Position is known when you have GPS input. Does Position ambiguity have meaning? How would you interpret Position Ambiguity when you have Live GPS input, particularly now that SA will be discontinued tonight? It is an inconsistent application of the definition. I agree with Jeff King in that we are not reporting our estimate of the error, we are munging the data, and do not know how. Are we rounding or truncating? If we have Live GPS input, the position is not ambiguous. In this case, we can only assume that we are concealing our position.

-----Original Message-----  
From: Ian Wade <Ian.Wade@care4free.net>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Date: Monday, May 01, 2000 9:09 AM  
Subject: [aprsspec] Re: [aprssig] Proper use of position ambiguity?

>In article <LYR14779-81011-2000.05.01-09.02.09--Ian.Wade#care4free.net@lists.tapr.org>, Tim Salo <salo@networkcs.com> writes

>  
>>  
>>I suggest that it makes more sense to admit the limitations of this  
>>scheme, rather than to make overly broad claims about the security it  
>>provides.

>  
>Tim, I didn't say anything about security. Neither does the spec say  
>anything about security.

>  
>73  
>Ian, G3NRW  
>Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
```

```

>| email: g3nrw@arrl.net |
>| |
>| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
>+-----+
>
>---
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>
>

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## 10. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
 Date: Mon, 1 May 2000 13:36:27 -0400 (EDT)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-81067-2000.05.01-12.38.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

On Mon, 1 May 2000, Brent Hildebrand wrote:

```

> Position Ambiguity Where the exact position is not known, the mm and hh
> digits in the latitude and longitude may be progressively replaced by a
> V (space) character as the amount of imprecision increases. For example:
> 07201.7_W represents longitude to nearest 1/10th of a minute.
> 07201._W represents longitude to nearest minute.
> 0720._W represents longitude to nearest 10 minutes.
> 072_._W represents longitude to nearest degree.
>
> The D700 case: Position is known when you have GPS input. Does Position
> ambiguity have meaning?

```

\*\*\* It always has meaning. There are 4 levels as defined above.

```

> How would you interpret Position Ambiguity when you have Live GPS
> input, particularly now that SA will be discontinued tonight?

```

\*\*\* Exactly as defined above...

```

> It is an inconsistent application of the definition.

```

\*\*\* Not at all. The 4 levels of position ambiguity are well defined, have unambiguous meaning and are ONLY A MEANS OF COMMUNICATING the 4 levels of ambiguity from the SENDER to the RECIPIENT. How these 4 levels are encoded has nothing to do with the definition... Although the example above does use the most obvious (uncompressed) format.

```

> I agree with Jeff King in that we are not reporting our estimate of the
> error,

```

\*\*\* We Never were. That is not in the definition. I say again, POSITION AMBIGUITY only is a way of communicating the number of digits of precision that the SENDER wants the RECEIVER to use. If the SPEC is not conveying this, then we need to reword the spec. But that has always been the reason, purpose, definition, and implementation of position Ambiguity.

```

> we are munging the data, and do not know how.

```

\*\*\* I don't see ANY munged data. Position ambiguity CONVEYS to the recipient the number of DIGITS of precision the SENDER wants the RECEIVER to use. It is really very simple...

```

> Are we rounding or truncating?

```

\*\*\* Doesn't matter. What "position ambiguity" conveys is the number of digits of precision. It does not address the remaining digits. That is up to the sender or initiator of the data to enter what he wants to convey.

```

> If we have Live GPS input, the position is not ambiguous.

```

\*\*\* It doesn't matter. "Position ambiguity" in APRS has NOTHING TO DO WITH THE ACCURACY nor the PRECISION of the original position. It has ONLY to do with the number of digits that the SENDER intends for the RECEIVER to use...

> In this case, we can only assume that we are concealing our position.

\*\*\* Assume anything you want. It is not germane. The SENDER indicates via POSITION AMBIGUITY the number of digits he wants the RECEIVER to use in his display of position. His reason for doing so does not matter.

\*\*\* Due to the apparent misunderstanding of Position Ambiguity, I would suggest a change to the spec from:

Position Ambiguity where the exact position is not known...

to

Position Ambiguity allows the originator of position data to convey to the receiver of that data the number of digits of precision to use in the display of his position. In the uncompressed format, this is accomplished by.....  
... In the Mic-E this is accomplished by encoding using available bits in the LATITUDE field.

de WB4APR, Bob

---

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## 11. [aprsspec] GPS selective activation turned-off!

From: "Richard Carter" <rich.carter@windriver.com>  
Date: Mon, 1 May 2000 13:41:42 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81069-2000.05.01-12.43.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

<http://www.whitehouse.gov/library/PressReleases.cgi?date=0&briefing=0>

Cheers!

Rich Carter - KE1EV

---

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## 12. [aprsspec] Re: GPS selective activation turned-off!

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 01 May 2000 16:31:58 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81110-2000.05.01-15.32.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Richard Carter wrote:

> <http://www.whitehouse.gov/library/PressReleases.cgi?date=0&briefing=0>

>

> Cheers!

>

:~)!!!!!!!!!!!!

-Jeff

---

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## 13. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 01 May 2000 16:50:03 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81114-2000.05.01-15.50.11--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Bob Bruninga wrote:

> On Mon, 1 May 2000, Brent Hildebrand wrote:  
>  
> > I agree with Jeff King in that we are not reporting our estimate of the  
> > error,

I actually was agreeing with what Bob has posted on this very SIG a few months ago. Posted some links to it also earlier in which he agreed/didn't object to it then.

> \*\*\* We Never were. That is not in the definition. I say again, POSITION  
> AMBIGUITY only is a way of communicating the number of digits of precision  
> that the SENDER wants the RECEIVER to use. If the SPEC is not conveying  
> this, then we need to reword the spec. But that has always been the  
> reason, purpose, definition, and implementation of position Ambiguity.

Yes, thats its purpose this week. Understand Brent? ;-(

> > Are we rounding or truncating?  
>  
> \*\*\* Doesnt matter. What "position ambiguity" conveys is the number of  
> digts of precision. It does not address the remaining digits. That is up  
> to the sender or initiator of the data to enter what he wants to convey.

Rounding or truncating needs to be in the SPEC. It DOES matter if you want a consistent user space, and MUST be defined if the data is passed on.

> ...

Well, at least SA was turned off today! ;-(

-Jeff

---

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---

## 14. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Tim Salo <salo@networkcs.com>  
Date: Mon, 1 May 2000 16:25:08 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81120-2000.05.01-16.26.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Mon, 1 May 2000 10:10:00 -0400 (EDT)  
> From: Bob Bruninga <bruninga@nadn.navy.mil>  
> Subject: [aprsspec] Re: [aprssig] Proper use of position ambiguity?  
>  
> On Mon, 1 May 2000, Tim Salo wrote:  
> > I suggest that it makes more sense to admit the limitations of this  
> > scheme, rather than to make overly broad claims about the security it  
> > provides.  
>  
> True, position ambiguity was not designed as a security measure. My  
> apologies if I have confused anyone...

I am probably confused as to the precise (if you will excuse the pun) motivation for position ambiguity.

> Date: Thu, 27 Apr 2000 21:13:13 -0400 (EDT)  
> From: Bob Bruninga <bruninga@nadn.navy.mil>  
> Subject: [aprssig] Re: Findu and security?  
>  
> On Thu, 27 Apr 2000, pmarkham wrote:  
> > 3. any ill willed lurker on the internet has a  
> > 24 hour a day report of my base and mobile whereabouts along with any other  
> > information that may be inferred. I have no use for that scenario.  
> >  
> > Is there a [way] that will prevent local traffic from being digi'd  
> > world wide via the internet?  
>  
> No. But that was one of the reasons I fought so hard for the positino  
> ambiguity capability that I built into APRS. Now most other authors  
> (except for steve DImse, I think) support it. THus, you can remain  
> ambiguous to the nearest .1, 1, 10, or 60 miles. Thus your position is

> known accurately enough for PATH, Propagation, and Message purposes, but  
> not so detailed as to encourage mischief.

And from the TM-D700A Instruction Manual (Specialized Communications):

Programming Position Ambiguity

There may be cases where you do not know or do not want to report  
your precise locations. For position data, you can select the  
number of digits not to be included in your packets. ...

I suggest that the APRS protocol spec note the limitations of position  
ambiguity as a security measure (since it has been touted as a security  
facility repeatedly and for some time).

-tjs

---

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---

## 15. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Jeff King <jeff@aerodata.net>  
Date: Mon, 01 May 2000 18:16:33 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81151-2000.05.01-17.16.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Tim Salo wrote:

> And from the TM-D700A Instruction Manual (Specialized Communications):  
>  
>       Programming Position Ambiguity  
>  
>       There may be cases where you do not know or do not want to report  
>       your precise locations. For position data, you can select the  
>       number of digits not to be included in your packets. ...

Well, you already know my feelings on letting Kenwood influence APRS development,  
but do note they say "where you do not know OR do not want to report  
your precise locations". Two distinct uses of position ambiguity, the first to  
convey the level of precision (our much touted high school example) and the  
other as a security measure.

> I suggest that the APRS protocol spec note the limitations of position  
> ambiguity as a security measure (since it has been touted as a security  
> facility repeatedly and for some time).

But its also been touted as a means to convey level of precision, see this  
posting from Bob from 1998 which is pre-WG:  
<http://www.tapr.org/tapr/list-archive/aprssi/9810/msg00985.html>  
This use of position ambiguity appears consistent with what the WG adopted.

The spec says:

>Position Ambiguity A reduction in the accuracy of APRS position information  
>(implemented by replacing low-order lat/long digits with spaces). Used when the  
>exact position is not known.

Implies the user (or sensor) gives their best guess as to their location, then that  
level of precision is carried in the APRS payload.

I repeat again. There is value in conveying a ACCURATE level of ambiguity. One need  
only look at the DF scenario to understand this and any other number of future applications  
of APRS in the communications field. While I understand that someone could use  
ambiguity as a means to purposely mask their position, I'm not comfortable with that being  
advocated in the spec (its not presently). There are much better long term means to do this, such  
as adoption of routing in the spec as well as flags the users can set to restrict the propagation  
of their posits.

73

-Jeff

P.S. Does anyone know if position ambiguity can be represented in the compressed format? As  
it starts with a numeric, it doesn't appears to me it can support position ambiguity. Now, it does  
have a GPS lock flag I note.



---

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## 16. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: "Neil Johnson" <[njohnson@interl.net](mailto:njohnson@interl.net)>  
Date: Tue, 2 May 2000 21:31:20 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-81433-2000.05.02-21.35.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Thought it was time for a reminder.

The current SPEC is to define the protocol AS IS on the air RIGHT NOW.

I agree the position ambiguity leaves some room for improvement, as are many other things.

The APRS WG should put on their list of things to address in the NEXT version of the protocol.

Neil Johnson  
[njohnson@interl.net](mailto:njohnson@interl.net)  
<http://www.interl.net/~njohnson>

-----Original Message-----

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
To: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Date: Monday, May 01, 2000 5:17 PM  
Subject: [aprsspec] Re: [aprssig] Proper use of position ambiguity?

>  
>  
>Tim Salo wrote:  
>  
>> And from the TM-D700A Instruction Manual (Specialized Communications):  
>>  
>>       Programming Position Ambiguity  
>>  
>>       There may be cases where you do not know or do not want to report  
>>       your precise locations. For position data, you can select the  
>>       number of digits not to be included in your packets. ...  
>  
>Well, you already know my feelings on letting Kenwood influence APRS  
development,  
>but do note they say "where you do not know OR do not want to report  
>your precise locations". Two \_distinct\_ uses of position ambiguity, the  
first to  
>convey the level of precision (our much touted high school example) and the  
>other as a security measure.  
>  
>> I suggest that the APRS protocol spec note the limitations of position  
>> ambiguity as a security measure (since it has been touted as a security  
>> facility repeatedly and for some time).  
>  
>But its also been touted as a means to convey level of precision, see this  
>posting from Bob from 1998 which is pre-WG:  
><http://www.tapr.org/tapr/list-archive/aprssi/9810/msg00985.html>  
>This use of position ambiguity appears consistent with what the WG adopted.  
>  
>The spec says:  
>>Position Ambiguity A reduction in the accuracy of APRS position  
information  
>>(implemented by replacing low-order lat/long digits with spaces). Used  
when the  
>>exact position is not known.  
>  
>Implies the user (or sensor) gives their best guess as to their location,  
then that  
>level of precision is carried in the APRS payload.  
>  
>I repeat again. There is value in conveying a ACCURATE level of ambiguity.  
One need  
>only look at the DF scenario to understand this and any other number of

future applications  
 >of APRS in the communications field. While I understand that someone could  
 use  
 >ambiguity as a means to purposely mask their position, I'm not comfortable  
 with that being  
 >advocated in the spec (its not presently). There are much better long term  
 means to do this, such  
 >as adoption of routing in the spec as well as flags the users can set to  
 restrict the propagation  
 >of their posits.  
 >  
 >73  
 >  
 >-Jeff  
 >  
 >P.S. Does anyone know if position ambiguity can be represented in the  
 compressed format? As  
 >it starts with a numeric, it doesn't appears to me it can support position  
 ambiguity. Now, it does  
 >have a GPS lock flag I note.  
 >  
 >  
 >  
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---

## 17. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Jeff King <jeff@aerodata.net>  
 Date: Tue, 02 May 2000 22:47:35 -0400  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-81436-2000.05.02-21.48.48--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain  
 As you wrote me directly here...

Neil Johnson wrote:

> Thought it was time for a reminder.  
 >  
 > The current SPEC is to define the protocol AS IS on the air RIGHT NOW.

I'm confused, exactly who is suggesting the spec be changed? With regards to  
 the definition of Position Ambiguity, looked fine to me as it was in the SPEC.

Or where you talking about Kenwood here?

-Jeff

---  
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---

## 18. [aprsspec] Re: [aprssig] Proper use of position ambiguity?

From: Tim Salo <salo@networkcs.com>  
 Date: Wed, 3 May 2000 08:47:28 -0500 (CDT)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-81504-2000.05.03-08.50.48--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain  
 > From: "Neil Johnson" <njohnson@interl.net>  
 > Subject: [aprsspec] Re: [aprssig] Proper use of position ambiguity?  
 > Date: Tue, 2 May 2000 21:31:20 -0500  
 >  
 > Thought it was time for a reminder.  
 >  
 > The current SPEC is to define the protocol AS IS on the air RIGHT NOW.  
 > [...]

I haven't been privy to the secret discussions of the APRS Working Group, but there have been some hints that this isn't entirely the case. I believe that there have been some cases where the protocol has been modified slightly in the process of developing the spec. In one or more of these instances different software implemented the protocol differently (which makes it difficult to say with precision what the on-the-air protocol really is).

I also believe that several deprecated protocol features are not contained in the spec, so a liberal implementation will have to accept protocol features beyond what are in the spec.

-tjs

---

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---

## 19. [aprsspec] APRS Protocol Spec Third Draft

From: John Ackermann <jra@febo.com>  
Date: Wed, 03 May 2000 11:05:15 -0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81512-2000.05.03-10.06.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

=====  
APRS WORKING GROUP  
APRS PROTOCOL REFERENCE  
THIRD PUBLIC DRAFT  
=====

The APRS Working Group has now published the third (and hopefully final) public draft of the APRS Protocol Reference. It is available on the TAPR website, at <http://www.tapr.org/tapr/html/Faprswg.html>.

This latest draft incorporates \*hundreds\* of items of feedback received since the previous draft published last December, and has now grown to 115 pages.

Several sections have been considerably expanded and clarified. In particular, the chapters on Mic-E, Weather Reports and APRS Symbols have been substantially rewritten.

The Working Group invites feedback on the specification, although due to the extensive public comments that we have already received on prior drafts, we will not have a formal comment period as defined in the WG charter; what we ask for now are additional eyes to ensure that we haven't inadvertently introduced new errors to this draft. Comments should be addressed to the TAPR "aprsspec" mailing list. Details of how to join the list are given on page 2 of the document.

The cutoff date for feedback is midnight local time on Monday 15 May. Then, depending on the amount of feedback received, the Working Group hopes to publish the Final Approved version of the specification a few weeks later.

John Ackermann, N8UR  
Administrative Chair, APRS Working Group  
2 May 2000

---

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---

## 20. [aprsspec] Location of PHG power measurement

From: "Clarke Diekmann" <cldiekmann@mindspring.com>  
Date: Wed, 3 May 2000 19:33:24 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81571-2000.05.03-20.35.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Congrats on getting the next revision to the specification on the street!

One question I have had since recently joining the APRS legions has to do with the PHG(D) data extension. There is no discussion of where in the system the power figure is measured. The logical choices are at the transmitter antenna jack or at the antenna input connector. Maybe I'm too much the novice here, but it seems like a brief explanation is indicated to discuss where the "P" in PHG is measured/calculated. It seems logical to

assume that the figure is taken at the input to the antenna in order to facilitate a rough ERP estimate. Depending on the loss in the feedline I realize the delta between the two points of measurement may be lost in the calculation algorithms.

Clarke

---

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## 21. [aprsspec] Query: Hurricane Format

From: "Dale Huguley" <[kg5qd@worldnet.att.net](mailto:kg5qd@worldnet.att.net)>  
Date: Thu, 4 May 2000 10:33:08 -0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-81650-2000.05.04-05.34.56--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-81650-2000.05.04-05.34.56--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hi All-

First of all I would like to express my thanks for all the work that went into the Draft Protocol.

I have a couple of questions concerning Hurricane format. The Draft has a 5 character field for the minimum central pressure- expressed in tenths of a millibar. The hurricane center reports only in full millibars, so the final digit would always be zero. Also presently the field is three digits- with pressures above 999 having the beginning "one" truncated. If the change is going to be 5 digits I need to know if present software can handle it. ( At this writing we are 27 days from Atlantic hurricane season, 12 days from pacific.)

As for as course and speed- the spec is for knots for a forward speed for all objects ( I believe). However the D700a has a "m" after the speed for an object, which I assume is for "MPH". Things are OK if this is a nautical mile per hour. At present I am reporting tornadoes and thunderstorms in MPH and Hurricanes in knots, and I would like to get off the fence. One solution is to report in knots and try to get the word out to D700a users there is a display bug. Which way should I go?

Thanks again for the hard work.

73 de KG5QD Dale

---

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## 22. [aprsspec] Re: Location of PHG power measurement

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 4 May 2000 09:09:32 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-81659-2000.05.04-08.11.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-81659-2000.05.04-08.11.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Your analysis is correct. It is not an exact science... Power getting to the antenna...

bob

On Wed, 3 May 2000, Clarke Diekmann wrote:

> Congrats on getting the next revision to the specification on the street!  
>  
> One question I have had since recently joining the APRS legions has to do  
> with the PHG(D) data extension. There is no discussion of where in the  
> system the power figure is measured. The logical choices are at the  
> transmitter antenna jack or at the antenna input connector. Maybe I'm too  
> much the novice here, but it seems like a brief explanation is indicated to  
> discuss where the "P" in PHG is measured/calculated. It seems logical to  
> assume that the figure is taken at the input to the antenna in order to  
> facilitate a rough ERP estimate. Depending on the loss in the feedline I  
> realize the delta between the two points of measurement may be lost in the  
> calculation algorithms.  
>  
> Clarke  
>

>  
> ---  
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>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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---

## 23. [aprsspec] RE: [aprssig] APRS Protocol Spec Third Draft

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 4 May 2000 09:22:24 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "'John Ackermann'" <jra@febo.com>, aprsspec@lists.tapr.org  
Message-ID: <LYR11589-81663-2000.05.04-08.24.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

G00d point Henk. But I would modify your suggestion as follows:

- 1) If there is a mix of SSID routing and VIA paths, then the VIA path shall be used first. And each HOP is used up in the usual fashion.
- 2) SSID routing should only apply when:
  - a) There is no additional path \*or\*
  - b) All additional hops have been used up.

This solves the ambiguity you noted, but is the least restrictive. It allows for future virsatility. For example, I am one hop away from an SSID network (say, in my basement with an HT), this woiuld let me use APRS-4,RELAY and be able to get into the SSID system.

de WB4APR, Bob

On Thu, 4 May 2000, Henk de Groot (EMN) wrote:

> Hallo John,  
>  
> Another remark on the new specification:  
>  
> Maybe it should be prohibited that if the destination SSID of an APRS packet is not 0 then there shall be no digipeaters in the VIA list, or that digipeating on destination SSID only works without any digis in the VIA list. Otherwise you will get a mixup of old and new digipeater implementations. Old ones that just use the VIA list regardless of destination SSID and new ones that act on the destination SSID. Since the destination SSID digipeating is introduced to keep the packet small there is also no point in having a VIA list. My proposal:  
>  
> Frame:  
>  
> PE1DNN>APZ008-7 - use generic digipeating on destination SSID  
>  
> PE1DNN>APZ008,WIDE - use generic digipeating on VIA list  
>  
> PE1DNN>APZ008-7,WIDE - use generic digipeating on VIA list, not on  
> SSID  
>  
> The specification is now not clear on what to do in the last case and also I think old and new digis should act consistently in the same way, therefore only allow digipeating on destination-SSID if there are no digipeaters in the VIA list.  
>  
> Kind regards,  
>  
> Henk.  
>  
> P.S. also send a Cc to Bob for comment.  
>  
> P.S.2. I'm not a member of the specification list so I hope you can take it this way... (I don't want too much traffic and discussions in my e-mail, this is a corporate account you see).  
>  
> --

> #####  
> The difference between theory and practice in practice is bigger than  
> the difference between theory and practice in theory.  
>  
> Henk de Groot | Tel: +31 53 4505400 Ext: 5400  
> <Henk.de.Groot@emn.ericsson.se> | Ericsson Business Mobile Networks  
>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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---

## 24. [aprsspec] Re: Query: Hurricane Format

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 4 May 2000 09:29:55 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-81667-2000.05.04-08.31.28--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

For Hurrican PRESSURE, we are waiting for comments from Mark. He was out of town during the last round of comments, and I confused myself and everyone else by "thinking" of the PRESSURE in the normal WX report (5 digits) and not the Hurricane format (which I do NOT parse I just display it as written).

So, Dale, and Mark (and anyone else with an opinion) settle it. I'll go with whatever you want.

Bob  
. On  
Thu, 4 May 2000, Dale Huguley wrote:

> Hi All-  
> First of all I would like to express my thanks for all the work that  
> went into the Draft Protocol.  
>  
> I have a couple of questions concerning Hurricane format. The Draft has a 5  
> character field for the minimum central pressure- expressed in tenths of a  
> millibar. The hurricane center reports only in full millibars, so the  
> final digit would always be zero. Also presently the field is three digits-  
> with pressures above 999 having the beginning "one" truncated. If the  
> change is going to be 5 digits I need to know if present software can handle  
> it. ( At this writing we are 27 days from Atlantic hurricane season, 12 days  
> from pacific.)  
>  
> As for as course and speed- the spec is for knots for a forward speed  
> for all objects ( I believe). However the D700a has a "m" after the speed  
> for an object, which I assume is for "MPH". Things are OK if this is a  
> nautical mile per hour. At present I am reporting tornadoes and  
> thunderstorms in MPH and Hurricanes in knots, and I would like to get off  
> the fence. One solution is to report in knots and try to get the word out  
> to D700a users there is a display bug. Which way should I go?  
>  
> Thanks again for the hard work.  
>  
> 73 de KG5QD Dale  
>  
>  
> ---  
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil  
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org  
>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060

See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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---

## 25. [aprsspec] Conversion factors in 1.0.1m

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Thu, 04 May 2000 19:52:54 +0300  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-81703-2000.05.04-11.53.54--lyris.aprsspec@tapr.org](mailto:LYR11589-81703-2000.05.04-11.53.54--lyris.aprsspec@tapr.org)>  
Rendered body type: text/plain

It is nice to see the added explanation of data transfer units and display units and also the collection of required conversion factors into a single table (from scattered around the glossary in the 1.0.1g version).

However, I would like to emphasise the importance of doing these conversions properly. Assuming the data is generated in some unspecified unit A and in order to use the on-the-air unit B, the value must be multiplied with a factor x. If we want to display the value at the other end in unit A, the on-the-air value must be multiplied by 1/x. However, if too small numeric precision is used to express the 1/x factor, the original value will not be represented.

To exaggerate, assume that the on-the-air unit is six times smaller than the original measurement, thus x=6. If the source will produce a measurement of 100, the on the air value will be 600. Assuming 1/x or 1/6 is represented with only two decimals, we would get 0.17 and multiplying this with the on air value, will give 102, which is clearly different from the original value. If the value is rebroadcasted, the error will cumulate.

This is just what happens with some values in the conversion table. For instance one foot is exactly 0.30480000... meters by definition, but the constant for 1/x is given as 3.2808 with only five significant digits, while even the single precision IEEE floating point system (used in e.g. x86 and 68k series processors) give 6-7 digits and double precision 14-15 digits.

I have recalculated the conversion factor values to at least 14 significant digits (use fixed pitch font for better readability):

```
> Units Conversion Table
>Multiply by to get
>feet 0.3048 meters
(this is by definition)
>meters 3.2808 feet
 3.2808398950131

>miles 1.609344 km
>km 0.6214 miles
 0.62137119223733

>miles 0.8689762 nautical miles
 0.86897624190065
>nautical miles 1.1507794 miles
 1.15077944802354

>miles per hour (mph) 0.8689762 knots
 0.86897624190065
>knots 1.1507794 miles per hour (mph)
 1.15077944802354

>knots 0.51444
meters / second
>meters / second 1.9438446 knots
 1.94384449244061
(note that the last digit in the original value was incorrect)

>miles per hour (mph) 0.44704 meters / second
>meters / second 2.2369362 miles per hour (mph)
 2.2369362920544
```

Some of those values are still approximations after 14 digits and since multiplying by 1/x is the same as dividing by x, it would be better to reformat the table slightly and only use exact values by either multiplying with or dividing by the exact value. In some cases both multiplication and division had to be used

#### Units Conversion Table

Convert from ! multiply by ! divide by ! to get

|                    |   |          |   |           |   |                      |
|--------------------|---|----------|---|-----------|---|----------------------|
| feet               | ! | 0.3048   | ! |           | ! | meters               |
| meters             | ! |          | ! | 0.3048    | ! | feet                 |
| miles              | ! | 1.609344 | ! |           | ! | km                   |
| km                 | ! |          | ! | 1.609344  | ! | miles                |
| miles              | ! | 1.609344 | ! | 1.852     | ! | nautical miles       |
| nautical miles     | ! | 1.852    | ! | 1.609344  | ! | miles                |
| (mph)              | ! | 1.609344 | ! | 1.852     | ! | knots                |
| knots              | ! | 1.852    | ! | 1.609344  | ! | miles per hour (mph) |
| (knots             | ! | 0.51444  |   |           |   |                      |
| ! meters / second) | ! |          |   |           |   |                      |
| (m/s               | ! |          | ! | 0.51444.. | ! | knots)               |

or better yet

|       |   |         |   |         |   |       |
|-------|---|---------|---|---------|---|-------|
| knots | ! | 1852    | ! | 3600    | ! | m/s   |
| m/s   | ! | 3600    | ! | 1852    | ! | knots |
| (mph) | ! | 0.44704 | ! |         | ! | m/s   |
| m/s   | ! |         | ! | 0.44704 | ! | mph   |

Examples:

5 ft = 5 \* 0.3048 = 1.524 m or rounded to 1.5 m

12.5 km = 12.5 / 1.609344 or about 7.77 miles.

7.45 kt = 7.45 \* 1.852 / 1.609344 or about 8.57 mph

In order to avoid unnecessary conversion errors, it is important that all stations use the same conversion constants and formulas. By including these into the specification, the risk is greatly reduced that some implementor decides to make some shortcuts that may cause conversion errors.

Paul OH3LWR

---

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## 26. [aprsspec] ADMIN: mail to the SIG administrator

From: Stan Horzepa <[stanzepa@mail2.nai.net](mailto:stanzepa@mail2.nai.net)>  
Date: Fri, 05 May 2000 19:21:42 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-81994-2000.05.06-19.17.29--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-81994-2000.05.06-19.17.29--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

The ILOVEYOU virus hit us hard at work and as a result, very little email has gone in or out of my workplace. If you sent SIG-administrator-related mail to my work email address ([stan\\_horzepa@adc.com](mailto:stan_horzepa@adc.com)) early Thursday morning or later, I likely did not get it and likely won't get it. So, please resend it to [wallou@tapr.org](mailto:wallou@tapr.org).

And, for the time being, only send SIG administrator mail to the email address of [wallou@tapr.org](mailto:wallou@tapr.org).

Thanks for your cooperation,

Stan Horzepa, WA1LOU, SIG administrator

---



## 27. [aprsspec] Announcing the APRS DECODER

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Sat, 6 May 2000 18:15:13 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-82056-2000.05.06-20.15.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

=====  
ANNOUNCING "APRSDEC"  
THE FULL APRS DECODER PROGRAM  
by Ian Wade, G3NRW  
6 May 2000  
=====

While working on the APRS Protocol Specification, I found it useful to write an APRS Decoder Program (APRSDEC) to verify the details of the protocol.

APRSDEC parses APRS packets in IGate output format, and produces a full decode of all elements of each packet. This will be particularly useful for APRS developers/testers, and also for people who need/want to know more about the protocol, or who want to check out their own packet formats.

Among the more obscure formats, APRSDEC fully understands Mic-E, compressed positions and area objects (circles, triangles etc).

Here is an example of APRSDEC output:

~~~~~  
APRSDEC. APRS Packet Decoder.  
Version 1.0.1b (5 May 2000)  
by Ian Wade, G3NRW (g3nrw@arri.net)

Runtime = 06-May-2000 16:13:21  
Input file = examples.log  
Output file = examples.out

NOTE: If this report contains anything that you think is incorrect,  
please email it to g3nrw@arri.net for investigation. Thank you.

-----  
Record # 1  
# EXAMPLES.LOG

-----  
Record # 2  
WA3SFJ-1>APRS:!3938.16NR07604.26W#PHG3533/CBRA Relay Digi  
APRS Data Type= Posit w/o time. No APRS  
Lat= 39 deg 38 min 10 sec N Long= 76 deg 4 min 16 sec W  
Icon= Star (green) Overlay= R  
Power= 9 watts Ant Height above average terrain= 320 ft Gain= 3 dB  
Range= 24 miles Directivity= South East

-----  
Record # 3  
KD6VZQ-1>APRS,TCPIP,KF6QHT\*:@270500z3724.66N/12205.51Wj118/000/Mic-E/M4/Committed>  
APRS Data Type= Posit w/ time. With APRS  
Day=27 Time=05hrs 00mins UTC  
Lat= 37 deg 24 min 40 sec N Long= 122 deg 5 min 31 sec W  
Icon= Jeep Overlay= (none)  
Course= 118 deg Speed= 0 knots ( 0 mph)

-----  
Record # 4  
KD6VZQ-1>3WRTVX,WR6ABD,W6CX-3\*:'2]P1!.j/] "4.)  
APRS Data Type= Current Mic-E data  
Radio= Kenwood TM-D700  
Message= /M4/Committed  
Lat= 37 deg 24 min 41 sec N Long= 122 deg 5 min 31 sec W  
Icon= Jeep Overlay= (none)  
Course= 118 deg Speed= 0 knots ( 0 mph)  
Altitude= 23 meters ( 75 feet)

-----  
Record # 5  
G3NRW>3WRTZZ\*:'2]P1!.j/] "4.)  
APRS Data Type= Current Mic-E data

Radio= Kenwood TM-D700  
Message= /M4/Committed  
Lat= 37 deg 24 min 0 sec N Long= 122 deg 5 min 0 sec W  
\*\* WARNING: POSITION AMBIGUOUS to the nearest minute  
Icon= Jeep Overlay= (none)  
Course= 118 deg Speed= 0 knots ( 0 mph)  
Altitude= 23 meters ( 75 feet)

-----  
Record # 6  
WB4APR>APRK11,W5RRR,RELAY,RELAY::MOVIE \*270138z/:iT!;.C!E{\*!Friday Night  
APRS Data Type= Object  
Object Name= MOVIE (Live)  
Day=27 Time=01hrs 38mins UTC  
Lat= 38 deg 57 min 58 sec N Long= 76 deg 32 min 56 sec W  
Icon= Eyeball Overlay= (none)  
Pre-Calculated Radio Range= 4 miles  
GPS Fix= Old NMEA Source= Other Compression Origin= Compressed

-----  
Record # 7  
G3NRW>APRS::ATLANTIC \*012345z0023.45N\00034.56E16201310{10}  
APRS Data Type= Object  
Object Name= ATLANTIC (Live)  
Day=01 Time=23hrs 45mins UTC  
Lat= 0 deg 23 min 27 sec N Long= 0 deg 34 min 34 sec E  
Icon= Area Symbol Overlay= (none)  
Object Type= Line (Type 6) Object Color= Violet (low intensity)  
Corridor= 10 miles either side of line  
yy offset= 4 deg down xx offset= 1 deg left  
Offset Posit: Lat= 3 deg 36 min 33 sec S Long= 0 deg 25 min 26 sec W

-----  
Record # 8  
VE6CPK>APW245,TCPIP\*:\_04270500c035s000g001t045r000p000P000h00b10279wDAV  
APRS Data Type= Weather stn (w/o posit)  
Month=Apr Day=27 Time=05hrs 00mins UTC  
Wind Direction= 35 deg Wind Speed= 0 mph Gust= 1 mph  
Temp= 45 degF Rain last hr= 0 in. last 24hrs= 0 in. since midnight= 0 in.  
Humidity= 100 % Barometric pressure= 1027.9 millibars

-----  
Record # 9  
HL5BHH-9>APRS,WIDE:\$GPRMC,050012,A,3508.544,N,12901.328,E,000.0,161.0,270400,006.9,W\*63  
APRS Data Type= Raw GPS Data  
Month=Apr Day=27 Year=00 Time=05hrs 00mins 12secs UTC  
Lat= 35 deg 8 min 32 sec N Long= 129 deg 1 min 19 sec E  
Icon= Car Overlay= (none)  
Course= 161.0 deg Speed= 0 knots ( 0 mph)  
Status=Valid Mag variation=006.9W

+++++ END OF INPUT FILE +++++

~~~~~  
With a few unimportant exceptions, APRSDEC understands all of the APRS features included in the Protocol Specification. As an extreme example, look at Record #7 above. This draws a line object with a 10-mile corridor either side, and is carefully contrived to cross both the Greenwich Meridian and the Equator -- the offset posit shows the position of the end of the line, in the opposite latitude and longitude hemispheres.

APRSDEC even recognizes Kenwood TM-D700 radios, and corrects the posit to be a \*current\* posit rather than an \*old\* posit. Position ambiguity (Mic-E and uncompressed lat/long) is also handled correctly.

APRSDEC includes extensive error reporting, showing for example when a parameter is out of range, or in is the wrong format, or (in the case of NMEA sentences) where there is a bad checksum.

APRSDEC is now available at <http://www.netro.co.uk/aprs.htm>

This is the first publicly released version, and I would welcome any feedback, especially if you find any errors.

Ian, G3NRW  
Technical Editor, APRS Protocol Specification  
\*\*\*\*\* Third draft now available \*\*\*\*\*

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---  
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---

## 28. [aprsspec] Presentation of Position Ambiguity

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sat, 6 May 2000 22:33:09 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-82187-2000.05.07-00.34.46--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello group -

In the recent discussion about position ambiguity, Bob stated that DosAPRS shows a "circle of ambiguity" below certain scale factors.

However, the ambiguity is given as a certian latitude and longitude (the latter directly or inferred, depending on the encoding device).

with all due respect, displaying this ambiguity as a circle is wrong. It is a rectangle!

Jim Wagner  
Oregon Research Electronics

```

wagnerj@proaxis.com Tangent, Oregon 97389
KA7EHK@KC7KFE.OR.USA.NOAM near Corvallis OR, home of
ka7ehk@yahoo.com Oregon State University

```

A computer without Windows is like a cake without mustard. - anonymous

---  
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---

## 29. [aprsspec] Re: Presentation of Position Ambiguity

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Sun, 7 May 2000 14:30:34 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-82241-2000.05.07-08.32.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-82187-2000.05.07-00.34.46--Ian.Wade#care4free.net@lists.tapr.org>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes

>Hello group -

>

>In the recent discussion about position ambiguity, Bob stated that DosAPRS shows a "circle of ambiguity" below certain scale factors.

>

>However, the ambiguity is given as a certian latitude and longitude (the latter directly or inferred, depending on the encoding device).

>

>with all due respect, displaying this ambiguity as a circle is wrong. It is a rectangle!

Agreed. For example, for the posit 1234. N/12345. W-, the location is only known to the nearest minute, so the rectangle looks like this:

```
12deg 34.99min N 12deg 34.99min N
123deg 45.99min W +-----+ 123deg 45.00min W
```

The station could be anywhere in this box.

— —

— — —

```

> by Ian Wade, G3NRW (g3nrw@arrl.net)
>
> Runtime = 06-May-2000 16:13:21
> Input file = examples.log
> Output file = examples.out
>
> NOTE: If this report contains anything that you think is incorrect,
> please email it to g3nrw@arrl.net for investigation. Thank you.
>
> -----
> Record # 1
> # EXAMPLES.LOG
>
> -----
> Record # 2
> WA3SFJ-1>APRS:13938.16NR07604.26W#PHG3533/CBRA Relay Digi
> APRS Data Type= Posit w/o time. No APRS
> Lat= 39 deg 38 min 10 sec N Long= 76 deg 4 min 16 sec W
> Icon= Star (green) Overlay= R
> Power= 9 watts Ant Height above average terrain= 320 ft Gain= 3 dB
> Range= 24 miles Directivity= South East
>
> -----
> Record # 3
> KD6VZQ-1>APRS,TCPIP,KF6QHT*:0270500z3724.66N/12205.51Wj118/000/Mic-E/M4/Committed>
> APRS Data Type= Posit w/ time. With APRS
> Day=27 Time=05hrs 00mins UTC
> Lat= 37 deg 24 min 40 sec N Long= 122 deg 5 min 31 sec W
> Icon= Jeep Overlay= (none)
> Course= 118 deg Speed= 0 knots (0 mph)
>
> -----
> Record # 4
> KD6VZQ-1>3WRTVX,WR6ABD,W6CX-3*:'2JPl!.j/] "4.}
> APRS Data Type= Current Mic-E data
> Radio= Kenwood TM-D700
> Message= /M4/Committed
> Lat= 37 deg 24 min 41 sec N Long= 122 deg 5 min 31 sec W
> Icon= Jeep Overlay= (none)
> Course= 118 deg Speed= 0 knots (0 mph)
> Altitude= 23 meters (75 feet)
>
> -----
> Record # 5
> G3NRW>3WRTZZ*:'2JPl!.j/] "4.}
> APRS Data Type= Current Mic-E data
> Radio= Kenwood TM-D700
> Message= /M4/Committed
> Lat= 37 deg 24 min 0 sec N Long= 122 deg 5 min 0 sec W
> ** WARNING: POSITION AMBIGUOUS to the nearest minute
> Icon= Jeep Overlay= (none)
> Course= 118 deg Speed= 0 knots (0 mph)
> Altitude= 23 meters (75 feet)
>
> -----
> Record # 6
> WB4APR>APRK11,W5RRR,RELAY,RELAY::MOVIE *270138z/:iT!;.C!E{*!Friday Night
> APRS Data Type= Object
> Object Name= MOVIE (Live)
> Day=27 Time=01hrs 38mins UTC
> Lat= 38 deg 57 min 58 sec N Long= 76 deg 32 min 56 sec W
> Icon= Eyeball Overlay= (none)
> Pre-Calculated Radio Range= 4 miles
> GPS Fix= Old NMEA Source= Other Compression Origin= Compressed
>
> -----
> Record # 7
> G3NRW>APRS::ATLANTIC *012345z0023.45N\00034.56E16201310{10}
> APRS Data Type= Object
> Object Name= ATLANTIC (Live)
> Day=01 Time=23hrs 45mins UTC
> Lat= 0 deg 23 min 27 sec N Long= 0 deg 34 min 34 sec E
> Icon= Area Symbol Overlay= (none)
> Object Type= Line (Type 6) Object Color= Violet (low intensity)
> Corridor= 10 miles either side of line
> yy offset= 4 deg down xx offset= 1 deg left
> Offset Posit: Lat= 3 deg 36 min 33 sec S Long= 0 deg 25 min 26 sec W
>
> -----

```

```

> Record # 8
> VE6CPK>APW245,TCPIP*:_04270500c035s000g001t045r000p000h00b10279wDAV
> APRS Data Type= Weather stn (w/o posit)
> Month=Apr Day=27 Time=05hrs 00mins UTC
> Wind Direction= 35 deg Wind Speed= 0 mph Gust= 1 mph
> Temp= 45 degF Rain last hr= 0 in. last 24hrs= 0 in. since midnight= 0 in.
> Humidity= 100 % Barometric pressure= 1027.9 millibars
>
> -----
> Record # 9
> HL5BHH-9>APRS,WIDE:$GPRMC,050012,A,3508.544,N,12901.328,E,000.0,161.0,270400,006.9,W*63
> APRS Data Type= Raw GPS Data
> Month=Apr Day=27 Year=00 Time=05hrs 00mins 12secs UTC
> Lat= 35 deg 8 min 32 sec N Long= 129 deg 1 min 19 sec E
> Icon= Car Overlay= (none)
> Course= 161.0 deg Speed= 0 knots (0 mph)
> Status=Valid Mag variation=006.9W
>
> ++++++ END OF INPUT FILE ++++++
>
>
> ~~~~~
>
>
> With a few unimportant exceptions, APRSDEC understands all of the APRS features included
> in the Protocol Specification. As an extreme example, look at Record #7 above. This draws
> a line object with a 10-mile corridor either side, and is carefully contrived to cross
> both the Greenwich Meridian and the Equator -- the offset posit shows the position of the
> end of the line, in the opposite latitude and longitude hemispheres.
>
> APRSDEC even recognizes Kenwood TM-D700 radios, and corrects the posit to be a *current*
> posit rather than an *old* posit. Position ambiguity (Mic-E and uncompressed lat/long) is
> also handled correctly.
>
> APRSDEC includes extensive error reporting, showing for example when a parameter is out of
> range, or in is the wrong format, or (in the case of NMEA sentences) where there is a bad
> checksum.
>
> APRSDEC is now available at http://www.netro.co.uk/aprs.htm
>
> This is the first publicly released version, and I would welcome any feedback, especially
> if you find any errors.
>
>
> 73
> Ian, G3NRW
> Technical Editor, APRS Protocol Specification
> ***** Third draft now available *****
> --
> +-----+
> | APRS on 144.800 [I0915X] ~55km/35 miles NNW of London |
> | email: g3nrw@arrl.net |
> | |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
> | APRS DECODER: http://www.netro.co.uk/aprs.htm |
> +-----+
>
> ---
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>
>
>
> ---
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```

### 31. [aprsspec] Re: Announcing the APRS DECODER

```

From: Ian Wade <Ian.Wade@care4free.net>
Date: Sun, 7 May 2000 18:19:09 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-82292-2000.05.07-12.25.55--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In article <LYR14779-82257-2000.05.07-09.40.51--Ian.Wade#care4free.net@l
ists.tapr.org>, Brent Hildebrand <bhildebrand@earthlink.net> writes
>One observation: APRS uses Degrees/Minutes for Lat/Long. The decoder reports

```

>Degrees/Minutes/Seconds. I should clarify, APRS uses Degrees/Minutes for most  
>packets reporting position. Mic-E is also encoded from Degrees/Minutes. The  
>?APRS? range query uses Decimal Degrees. NMEA is also a form of  
>Degrees/Minutes. I would suggest reporting position in your decoder as  
>Degrees/Minutes, in place of Degrees/Minutes/Seconds to be consistent with APRS  
>format. Brent

OK, I understand that. In fact, others have asked for temperatures in  
Celsius, speeds in km/hour, meters/sec etc. So in the next release there  
will be a .INI file where you can set up your own preferences.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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### 32. [aprsspec] Re: Presentation of Position Ambiguity

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 7 May 2000 21:40:46 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-82370-2000.05.07-20.42.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 6 May 2000, Jim Wagner wrote:

>  
> In the recent discussion about position ambiguity, Bob stated that DosAPRS  
> shows a "circle of ambiguity" below certain scale factors.  
>  
> However, the ambiguity is given as a certian latitude and longitude (the  
> latter directly or inferred, depending on the encoding device).  
>  
> with all due respect, displaying this ambiguity as a circle is wrong. It is  
> a rectangle!

Or a circle containing the rectangle...

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### 33. [aprsspec] Re: Announcing the APRS DECODER

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 7 May 2000 21:55:17 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-82371-2000.05.07-20.56.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 7 May 2000, Ian Wade wrote:

> OK, I understand that. In fact, others have asked for temperatures in  
> Celsius, speeds in km/hour, meters/sec etc. So in the next release there  
> will be a .INI file where you can set up your own preferences.

Ian, this battle has been raging from day one. AND I think we even got it  
into the spec that the "standard" format for APRS is DEGS and MINUTES.

Yes, you can covert and display in anything you want, but we prefer that  
such displays make it clear what the APRS standard is so that when we are  
talking VOICE we have some degree of consistency. I am amazed at what I  
hear on the air. So many folks dont know the difference between seconds  
and decimal minues and use them interchangeably. TO avoid this tower of  
babble we prefer to entrench in to the APRS community, only one "standard"  
method. They can convert as needed... but we need a "common" approach

throughout APRSdom...

Bob

---

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---

### 34. [aprsspec] Re: Announcing the APRS DECODER

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Mon, 8 May 2000 06:49:15 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-82426-2000.05.08-01.11.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-82426-2000.05.08-01.11.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR14779-82371-2000.05.07-20.56.55--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-82371-2000.05.07-20.56.55--Ian.Wade#care4free.net@lists.tapr.org)>, Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes  
>  
>Ian, this battle has been raging from day one. AND I think we even got it  
>into the spec that the "standard" format for APRS is DEGS and MINUTES.  
>  
>Yes, you can covert and display in anything you want, but we prefer that  
>such displays make it clear what the APRS standard is so that when we are  
>talking VOICE we have some degree of consistency. I am amazed at what I  
>hear on the air. So many folks don't know the difference between seconds  
>and decimal minutes and use them interchangeably. To avoid this tower of  
>babble we prefer to entrench in to the APRS community, only one "standard"  
>method. They can convert as needed... but we need a "common" approach  
>throughout APRSdom...  
>

Agreed Bob. My approach in future with APRSDEC will be to ALWAYS report  
the output in APRS standard units (with no means of turning that off),  
PLUS an optional conversion in parentheses (as I have already done in  
converting knots to mph, for example). In fact, in the current version,  
everything except lat/long \*is\* reported in APRS standard units.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

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---

### 35. [aprsspec] Re: Presentation of Position Ambiguity

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Mon, 8 May 2000 07:09:55 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-82427-2000.05.08-01.11.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-82427-2000.05.08-01.11.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR14779-82370-2000.05.07-20.42.58--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-82370-2000.05.07-20.42.58--Ian.Wade#care4free.net@lists.tapr.org)>, Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes

>  
>Or a circle containing the rectangle...  
>

Yup, I guess that qualifies as ambiguous .... <grin>

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--



```
+-----+
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| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

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### 36. [aprsspec] A Question about Map View and Range Scale

From: James Wagner <ka7ehk@yahoo.com>  
Date: Wed, 10 May 2000 16:32:25 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83023-2000.05.10-18.34.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello everyone -

I am concerned about the statement at the bottom of Page 11 of 1.0.1m on "Map Views and Range Scale".

First, let me provide the definitions >>I<< use:

Map - the visual presentation of a geographical data base through which the the user can navigate without manually requesting the loading of a new map.

View - that portion of a map which is visible on a computer screen at any instant, without any manipulation. The view may encompass an entire map, or it may encompass much less than an entire map.

Here is an example. In WinAPRS or MacAPRS, you get a U.S. map and some regional maps. If you want to view anything in any detail, you need to go to a menu and select another "map" (say, Washington). Within any map, you can shift the view to see a region of the map. That region can be as large as the whole map or it can be some smaller part as the result of "zooming in". But, there is still a point beyond which, if you want more detail, you have to load yet another map. This is the distinction I make between Map & View.

=====

The quote:  
APRS is a tactical geographical system, and users need to be able to relate □map views□ in a non-ambiguous way. Thus all map displays should have a meaningful legend to convey the scale of the map view to the user.

Thus when communicating about such views, three parameters are required:  
the latitude and longitude of the map center and the Range Scale.

In this context, the Range Scale is the approximate range (in nautical miles, miles or km) from the center of the map to the top or bottom. This convention gives all software users a common basis for describing tactical map views (at whatever Range Scale is in use).

=====

(end of quote)

Suppose that you are using APRS+SA. There, the map covers the entire surface of the earth. You can move seamlessly to any place on the earth without having to load a single "map". For the SA map, the center of the map is 0000.00/00000.00 and the Range Scale is 6220 miles (approx distance from equator to either pole). I find no use for this "info" at all.

Suppose that the user has a very detailed map of the (contiguous) U.S. and the center is somewhere around Nebraska. And, suppose that the user has zoomed in to view the Seattle area. Pardon me, but the location of the center of the map and the "Range Scale" don't matter one iota. What does the user care while viewing a boat on the Puget Sound that the "center" of the map is out there in "no-human's land".

Suppose that we substitute the term "view" for the term "map" in the quoted text. It still makes no sense. Here is an example:

I can have a view which is the full width of my monitor screen but with a very small height because I am watching vehicles along I-84 in the western U.S. while monitoring my local APRS traffic (in other non-map) windows. What information does this "Range Scale" provide? It may be only 50 miles while having an east-west extent of 500 miles or more.

For that matter, I just might even have multiple map windows (with several open and visible at the same time).

But, then, what DOES matter? To my mind, the only thing that does matter is that stations in an event be able to view locations which are of shared importance. If a user can readily shift the location of a view to "see" a specified geographical location or a specified symbol (or symbols), can determine the geographical location of a point within the current view, and determine the distance between two points in the view, then that is sufficient.

It seems to me that this statement is a hang-up on the idea of military tactical map display. I argue that its usefulness is nearly zero for real-world ham application of APRS. If Bob wants to develop commercial applications of APRS which can be sold to the military, that is one thing. But to shackle us with that requirement makes little or no sense at all.

Thanks for putting up with my rant!

Jim, KA7EHK

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### 37. [aprsspec] Re: A Question about Map View and Range Scale

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 10 May 2000 21:53:18 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83053-2000.05.10-20.55.03--lyris.aprsspec@tapr.org@lists.tapr.org](mailto:LYR11589-83053-2000.05.10-20.55.03--lyris.aprsspec@tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Wed, 10 May 2000, James Wagner defined VIEW:

> View - that portion of a map which is visible on a computer screen

Then he noted:

> =====  
> APRS is a tactical geographical system, and users need to be able to  
> relate map views in a non-ambiguous way. Thus all map displays should  
> have a meaningful legend to convey the scale of the map view to the  
> user.  
>  
> Thus when communicating about such views, three parameters are  
> required: the LAT/LONG of the map center and the Range Scale.  
>  
> In this context, the Range Scale is the approximate range (in nautical  
> miles, miles or km) from the center of the map to the top or bottom.  
> This convention gives all software users a common basis for describing  
> tactical map views (at whatever Range Scale is in use).  
> =====

He then correctly argues that the center of the "MAP" is meaningless. He is right. Lets change the above paragraph from "map" to "view". Clearly "view" was intended.

> Suppose that we substitute the term "view" for the term "map" in the  
> quoted text. It still makes no sense. Here is an example:  
>  
> I can have a view which is the full width of my monitor screen but with  
> a very small height because I am watching vehicles along I-84 in the  
> western U.S. while monitoring my local APRS traffic (in other non-map)

> windows. What information does this "Range Scale" provide? It may be  
> only 50 miles while having an east-west extent of 500 miles or more.

Yes, but your range scale is then 50 miles. This UNAMBIGUOUSLY will assure that if I am ALSO looking at the same CENTER COORDINATES and RANGE SCALE of 50 miles that I will also see everything that you are seeing in that same area.

> For that matter, I just might even have multiple map windows (with  
> several open and visible at the same time).

Fine. Each "view" still has center coordinates and a range scale.

> It seems to me that this statement is a hang-up on the idea of military  
> tactical map display. I argue that its usefulness is nearly zero for  
> real-world ham application of APRS.  
> Jim, KA7EHK

If you have an alternate way to communicate "view" scales unambiguously to all users, across all platforms and software types, then please share it with us. Thanks

Bob, wb4apr

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### 38. [aprsspec] Central storm pressure

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Thu, 11 May 2000 06:15:00 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83094-2000.05.11-00.16.26--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83094-2000.05.11-00.16.26--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

What is the lowest central pressure ever likely to be reached in a severe tropical storm/tornado/hurricane etc? I have no idea. 800 mbar? 700? 600? Lower yet?

Is there any point in expressing it to the nearest 0.1 mbar?

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

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+-----+
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| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
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### 39. [aprsspec] Re: A Question about Map View and Range Scale

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Wed, 10 May 2000 22:22:02 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83098-2000.05.11-00.23.48--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83098-2000.05.11-00.23.48--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Earlier, I posted a "rant" about Map Center and Range Scale. I offered the the example of a view encompassing a large portion of I-80 in the West. It shows perhaps 100mi N/S and 1000mi E/W.

Now, someone else can have the same range scale (50 mi) and the same center, but have an E-W extent of only 200 mi. Clearly, the two views do not show the same information!

Bob responded:

>

>Yes, but your range scale is then 50 miles. This UNAMBIGUOUSLY will  
>assure that if I am ALSO looking at the same CENTER COORDINATES and RANGE  
>SCALE of 50 miles that I will also see everything that you are seeing in  
>that same area.  
>

Yes, but having the same Center Coord and Range Scale does not mean that  
you and I can see the same thing.

Bob further responded:

>  
>If you have an alternate way to communicate "view" scales unambiguously to  
>all users, across all platforms and software types, then please share  
>it with us. Thanks  
>  
>Bob, wb4apr  
>  
>

There simply is NOT enough information.

One of the following will work:

(1) Center Coord + N/S extent PLUS E/W extent

or

(2) N. Boundary, S Boundary, E. Boundary, and West Boundary

or

(3) anything else which is translatable into a specification of the four  
edges of the view.

Sincerely,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of  
ka7ehk@yahoo.com                      Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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## 40. [aprsspec] Re: Central storm pressure

From: "Dale Huguley" <kg5qd@worldnet.att.net>  
Date: Thu, 11 May 2000 10:21:33 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83139-2000.05.11-05.23.38--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All-

From Chris Landsea's Hurricane FAQ-  
Typhoon Tip in the Northwest Pacific Ocean on 12 October 1979 was measured  
to have a central pressure of 870 mb and estimated surface sustained winds  
of 85 m/s (165 kt, 190 mph).

No reason to have tenths of millibars- it is not reported that way- for  
programming - and using 3 digits-  
below 500 needs to have a "1" added to the beginning for display- above 500  
to 999 - just display1

For example 010 would be displayed "1010"  
957 would be displayed "957"

73 de kg5qd Dale

>What is the lowest central pressure ever likely to be reached in a  
>severe tropical storm/tornado/hurricane etc? I have no idea. 800 mbar?

>700? 600? Lower yet?  
>  
>Is there any point in expressing it to the nearest 0.1 mbar?  
>  
>73  
>Ian, G3NRW

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## 41. [aprsspec] Re: A Question about Map View and Range Scale

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 11 May 2000 08:40:15 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-83154-2000.05.11-07.42.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Wed, 10 May 2000, James Wagner wrote:

> I posited a very wide (1000mi) but short map (100 mi) ... and I  
> suggested that Range Scale would provide very little information in this  
> case.  
>  
> Bob responded:  
> >  
> > Yes, but your range scale is then 50 miles. This UNAMBIGUOUSLY will  
> > assure that if I am ALSO looking at the same CENTER COORDINATES and  
> > RANGE SCALE of 50 miles that I will also see everything that you are  
> > seeing in that same [centered] area.  
>  
> Ahh, but someone else can have the same Range Scale and Center Coords  
> and have an E/W extent of only 200 mi. That person will never see 800  
> miles of your map, yet they will have the same Center Coords and Range  
> Scale.

No you are confusing the term range scale. You may be looking at a LONG flat horizontal view and I may be looking at a TALL skinny view, but there is absolutely no ambiguity possible in our definition of range scale. That is "the largest circle that will fit in the view." That was always my definition. As written in the spec, we used the distance from the center of the view to the top or bottom, but in the examples you have raised, I think it would be better if we went back to this fundamental definition.

Something like:  
"Range Scale is the radius of the largest circle that will "conviently" fit on the map view"... This way you may have the long flat and the tall skinny views if you like...

> To me, this is less than useful. >  
> I then made the following statement:  
>  
> > > It seems to me that this statement is a hang-up on the idea of  
> > > military tactical map display. I argue that its usefulness is nearly  
> > > zero for real-world ham application of APRS.  
> > > Jim, KA7EHK  
> >  
> To which Bob responded:  
>  
> > If you have an alternate way to communicate "view" scales unambiguously  
> > to all users, across all platforms and software types, then please  
> > share it with us. Thanks  
> > Bob, wb4apr  
>  
> I add .....  
>  
> You really need one of the following:  
> Center Coords and N/S Range PLUS E/W Range ....  
>  
> OR  
>  
> East boundary, West boundary, North boundry, South Boundary  
>  
> OR  
>

> Any other measure which defines all 4 edges of the View.

Yes, that would be absolutely correct, but absurd to use in voice communications. I am trying to define a consistent but "brief" means for human communication. By voice I say "go to X/Y at the Z range scale." What could be simpler.

As long as that is the standard, then I do not object to the option of saying "I am viewing X/Y with a N/S range scale of A and an east west range scale of B". This is perfectly acceptable... As long as the single value is the understandable default.

de WB4APR, Bob

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## 42. [aprsspec] The Point about Range Scale

From: James Wagner <[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)>  
Date: Thu, 11 May 2000 08:41:44 -0700 (PDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83188-2000.05.11-10.43.26--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83188-2000.05.11-10.43.26--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Group -

Here is my point:

I have a view that has a N/S extent of 100 miles and an E/W extent of 1000 miles. The Range Scale is 50 miles. The center is Cheyenne, WYO.

My buddy Fred has a view (with the same center) with a N/S extent of 100 miles and E/W extent of 100 miles. His Range Scale is 50 miles.

I call up Fred on the local voice repeater and say "Freddy, o'l buddy, you see that truck symbol out there, east of Lincoln, Nebraska?"

He can't see it on his view because it does not have the same E/W extent as mine. Range Scale is simply not a SUFFICIENT view descriptor.

Jim Wagner,  
KA7EHK

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## 43. [aprsspec] Re: The Point about Range Scale

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 11 May 2000 17:25:49 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83242-2000.05.11-16.27.42--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83242-2000.05.11-16.27.42--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Thu, 11 May 2000, James Wagner Further attempts his point:

>

> I have a view that has a N/S extent of 100 miles and an E/W extent of 1000 miles. The Range Scale is 50 miles. The center is Cheyenne, WYO.

> My buddy Fred has a view (with the same center) with a N/S extent of 100 miles and E/W extent of 100 miles. His Range Scale is 50 miles.

>

> I call up Fred on the local voice repeater and say "Freddy, o'l buddy, you see that truck symbol out there, east of Lincoln, Nebraska?"

> He can't see it on his view because it does not have the same E/W extent as mine. Range Scale is simply not a SUFFICIENT view descriptor.

PERFECT EXAMPLE! Of how important the concept of CENTER and RANGE are!

- 1) You didnt communicate CENTER to Freddy.
- 2) You didnt communicate RANGE.
- 3) Your example shows exactly how useless on-air discussion of map views are without these two parameters...

Thanks, I hope you now see how important CENTER and RANGE are to any meaningful communications regarding map views...

Bob

---

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---

#### 44. [aprsspec] More about Center and Range

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Thu, 11 May 2000 23:23:17 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83308-2000.05.12-01.25.09--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83308-2000.05.12-01.25.09--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Group -

My example omitted one thing, only. It DID say that the two views have the same center and range. {It was by pre-arrangment}.

The example was exactly to show that Center and Range are INSUFFICIENT.

The two views, one 100mi by 1000 mi and the other 100mi by 100 mi. They have exactly the same center and the same range. One sees a drastically different picture of the world than the other.

Another number is needed. You are trying to specify a "rectangular" region on the surface of the globe. You can specify the four corners, the four edges, or the center plus "range" distances in an orthogonal coordinate system (normally aligned with the lat/lon coordinate system).

Very simply, any thing else is not sufficient.

It is not adequate.

It is incomplete.

Its NOT GOOD ENOUGH!

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
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A computer without Windows is like a cake without mustard. - anonymous

---

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---

#### 45. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 12 May 2000 08:55:08 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83323-2000.05.12-07.57.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83323-2000.05.12-07.57.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Thu, 11 May 2000, Jim Wagner wrote:

> My example omitted one thing, only. It DID say that the two views have the  
> same center and range. (50 miles) {It was by pre-arrangment}.

Then why did you choose to talk about a Truck that was 500 miles away

and 450 miles outside of that "range"? In this case, the center and range are not insufficient. In this case they were just plain wrong.

> The example was exactly to show that Center and Range are INSUFFICIENT.  
>  
> The two views, one 100mi by 1000 mi and the other 100mi by 100 mi. They  
> have exactly the same center and the same range. One sees a drastically  
> different picture of the world than the other.

I disagree. Within the "SAME RANGE". Both see EXACTLY THE SAME VIEW.

> Another number is needed. You are trying to specify a "rectangular" region  
> on the surface of the globe. You can specify the four corners, the four  
> edges, or the center plus "range" distances in an orthogonal coordinate  
> system (normally aligned with the lat/lon coordinate system).

No I am not trying to define a "rectangular region" Look at the definition (or the way the definition should be written). RANGE is the approximate size of the largest circle that will fit within the view. "Range" of a map view is measured from the center outward.

If you want to extend this, then range can easily refer to rectangles if you want by refereing to a N/S "range" and and East/West "range" if you like. But a single "range" is the lowest common denominator that unambiguously gives two separate operators the necessary information to describe the same field of interest.

RADIO waves go out radially in all directions. They dont go out in boxes. Radio waves have "range". Distance has "range". Grandma's house is 75 miles away. It is not 50 miles east and 25 miles north.

bob

---

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---

## 46. [aprsspec] Re: More about Center and Range

From: James Wagner <ka7ehk@yahoo.com>  
Date: Fri, 12 May 2000 15:26:28 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83420-2000.05.12-17.28.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Group,

(trimmed)....  
> No I am not trying to define a "rectangular region" Look at the  
> definition (or the way the definition should be written). RANGE is  
> the  
> approximate size of the largest circle that will fit within the view.  
> "Range" of a map view is measured from the center outward.  
>

(trimmed)....  
>  
>RADIO waves go out radially in all directions. They dont go out in  
>boxes.  
>Radio waves have "range". Distance has "range". Grandma's house is  
>75  
>miles away. It is not 50 miles east and 25 miles north.  
>

(trimmed)....  
>  
> bob

This definition of Range Scale does not appear in the document.  
Anywhere.

With digipeating, it makes little sense to me to confine "range" to some circle defined by direct RF coverage. We commonly see stations (here in Western Oregon) that are 400 miles or more distant (without use of gateway).



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---

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---

## 47. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 12 May 2000 22:15:16 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83464-2000.05.12-21.17.06--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83464-2000.05.12-21.17.06--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 12 May 2000, James Wagner wrote:

> > Range is the approximate size of the largest circle that will fit  
> > within the view. "Range" is measured from the center outward.

> This definition of Range Scale does not appear in the document.  
> Anywhere.

I will entertain the change as noted below:

-----  
APRS is a tactical geographical system, and users need to be able to  
relate map view in a non-ambiguous way. Thus all map displays should  
have a meaningful legend to convey the scale of the map view to the  
user.

Thus when communicating about such views, three parameters are  
required:  
the latitude and longitude of the map center and the Range Scale.

In this context, the Range Scale is the approximate range (in nautical  
miles, miles or km) from the center of the map to the top or bottom.  
This convention gives all software users a common basis for describing  
tactical map views (at whatever Range Scale is in use).

=====

CHANGE "map" to "view" and change "top or bottom" to "nearest edges".

de WB4APR, Bob

---

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---

## 48. [aprsspec] Re: More about Center and Range

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Sat, 13 May 2000 13:16:45 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83540-2000.05.13-07.18.20--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83540-2000.05.13-07.18.20--lyris.aprsspec#tapr.org@lists.tapr.org)>  
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In article <[LYR14779-83308-2000.05.12-01.25.09--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-83308-2000.05.12-01.25.09--Ian.Wade#care4free.net@lists.tapr.org)>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes

>Another number is needed. You are trying to specify a "rectangular" region  
>on the surface of the globe. You can specify the four corners, the four  
>edges, or the center plus "range" distances in an orthogonal coordinate  
>system (normally aligned with the lat/lon coordinate system).

>  
>Very simply, any thing else is not sufficient.

>  
>It is not adequate.

>  
>It is incomplete.

>  
>Its NOT GOOD ENOUGH!

Here is another approach. Consider these two windows, each with exactly the  
same geographical center and the same range scale. (The range circles are

A diagram showing a hexagonal cell labeled 'C'. The cell is defined by a dashed line. The cell is surrounded by a solid line, which is part of a larger boundary. The cell is located in the center of the diagram.

The diagram shows a rectangular domain  $T$  enclosed by a dashed line. Inside  $T$ , there is a hexagonal cell  $C$ . The top edge of  $C$  is a solid line, while its other five edges are dashed lines. The label  $C$  is placed inside the hexagon, and the label  $T$  is placed in the lower right area of the rectangle.

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From: Bill Diaz <billldiaz@megsinet.net>  
Date: Sat, 13 May 2000 11:41:28 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83573-2000.05.13-11.43.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
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A method I use to display a view of a map described as Lat, Lon, and Radius is to create a rectangle :

This provides rectangle that will contain the ellipse described by Lat, Lon, and Radius.

IMO, Lat, Lon, Radius is sufficient information to create the view intended and no other information is required.

```
> In other words, Bob's definition of using "map views" in a non-ambiguous
> way is only guaranteed to work WITHIN THE RANGE CIRCLE.
```

```

>
> [Does Bob's definition stem from the military perhaps, where screen sizes
> (and hence views) used to be fixed in an approx 4:3 aspect ratio? This is
> OK in a full-screen DOS environment, but totally inappropriate in Windows].
>
> A way round this is to change the definition in the spec:
>
> 1. Remove completely the concept of "map view". (The "map view" depends on
> the user's whim in selecting an area to look at -- users can select windows
> of any size and shape, and can pan/zoom at will within a window).
>
> 2. Replace "map view" with "Reference View". The "Reference View" is the
> area within a range circle of radius R centered at lat/long Y/X.
>
> Users will agree the "Reference View" with each other. They will then have
> a non-ambiguous understanding of the area they are talking about. (The fact
> that Jim can also see a truck in his window is irrelevant. If Jim wants Bob
> to see the truck, he has to increase or re-center his range circle to
> include the truck, then tell Bob the new "Reference View").
>
> Note that the "Reference View" is the area within the range circle
> ON THE GROUND, not in the display window.
> ~~~~~
> Depending on how the user pans and zooms:
>
> 1. The "Reference View" need not be centered in the window.
>
> 2. The "Reference View" may not even be visible in the window at all.
>
> 3. The whole of the "Reference View" may be displayed in the window.
>
> 4. Only part of the "Reference View" may be displayed in the window.
>
> 5. The boundary of the "Reference View" may or may not touch the
> upper/lower edge of the window.
>
> The Y/X and R values define the "Reference View" completely and
> unambiguously.
>
> The "Reference View" is not in any way related to the display window/screen
> geometry-- if the range circle happens to touch the top/bottom edges of the
> window, that is just a coincidence.
>
> 73
> Ian, G3NRW
> Technical Editor, APRS Protocol Specification
> ***** Third draft now available *****
> --
> +-----+
> | APRS on 144.800 [IO915X] ~55km/35 miles NNW of London |
> | email: g3nrw@arrl.net |
> | |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
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```

## 50. [aprsspec] Developers: NEMA simulator

```

From: Jeff King <jeff@aerodata.net>
Date: Sat, 13 May 2000 15:00:32 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-83605-2000.05.13-14.00.40--lyris.aprsspec#tapr.org@lists.tapr.org>
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Ran across a freeware program that simulates a NEMA data stream, and thought
it might be of use to some on the list. You can see it at:

http://www.sailsoft.nl/software2.htm

-Jeff wb8wka

```

---

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---

## 51. [aprsspec] Still more about Center and Range

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sat, 13 May 2000 21:37:37 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83698-2000.05.13-23.39.33--lyris.aprsspec@tapr.org](mailto:LYR11589-83698-2000.05.13-23.39.33--lyris.aprsspec@tapr.org)>  
Rendered body type: text/plain

Group -

I don't think that I am getting through!

The spec says (and Bob seems to concur) the following:

-----  
APRS is a tactical geographical system, and users need to be able to relate map view in a non-ambiguous way. Thus all map displays should have a meaningful legend to convey the scale of the map view to the user.  
-----

When one user has a view that encompasses 100mi X 800 mi and another has a view that encompasses 100mi X 100mi, they have, by the definition Bob has been presenting, the same Range.

I assert that this is the very opposite of a "non-ambiguous way". Even the change to "nearest edges" does not solve it. Consider one user with a view 100mi (N/S) X 800mi (E/W) and the second with a view 800mi N/S and 100mi E/W. These users have the same Range but see vastly different information.

Why the hangup with a "circle"? We are not dealing with artillery or rockets or torpedos. We are not confining ourselves to non-digipeated signals. It takes only one more number conveyed to provide a full, unambiguous description. Why is this a problem?

Why not do what the statement asserts: "able to relate map views in an unambiguous way". Anything other than four coordinates of your choice simply does not give an unambiguous description of a view. And any four, in an orthogonal coordinate system, are translatable to any other four. Lets face up to the world of real-world geometry and quit trying to cut corners. Why is one more number such a problem?

I can see only two ways for Bob's three-quantity description to be sufficient:

(1) There is a region marked out on the view which says "this is the region visible by others who have the same Range you have."

(2) Force views to be (geographically) "square".

I, as a user and programmer, will not accept the second. The first is nearly trivial but is a pain in the rear to have to do when its not necessary and when (almost) nobody else does it.

Very sincerely,  
Jim Wagner, KA7EHK

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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## 52. [aprsspec] Reference View

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Sat, 13 May 2000 22:31:57 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83725-2000.05.14-00.34.20--lyris.aprsspec#tapr.org@lists.tapr.org>  
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Group -

I like Ian's suggestion of a "Reference View".

However, I am still really puzzled about this business of trying to save one coordinate which would completely specify a rectangular view of any aspect ratio.

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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### 53. [aprsspec] Re: More about Center and Range

From: Cap Pennell <cap@cruzio.com>  
Date: Sat, 13 May 2000 23:01:00 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83730-2000.05.14-01.04.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
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At 05:16 AM 5/13/2000, Ian Wade wrote:

><snip>

>A way round this is to change the definition in the spec:

>

>1. Remove completely the concept of "map view". (The "map view" depends on  
>the user's whim in selecting an area to look at -- users can select windows  
>of any size and shape, and can pan/zoom at will within a window).

>

>2. Replace "map view" with "Reference View". The "Reference View" is the  
>area within a range circle of radius R centered at lat/long Y/X.

>

>Users will agree the "Reference View" with each other. They will then have  
>a non-ambiguous understanding of the area they are talking about. (The fact  
>that Jim can also see a truck in his window is irrelevant. If Jim wants Bob  
>to see the truck, he has to increase or re-center his range circle to  
>include the truck, then tell Bob the new "Reference View").

<snip>

An elegant solution! Bravo!

73, Cap KE6AFE

P.S. I'm hoping to soon buy a monitor with a triangular screen. I should  
still be able to share Reference Views with it though. hi hi

--

Cap Pennell

Santa Cruz, CA 95062-1002       3658.93N/12200.91W [CM86xx]  
email: cap@cruzio.com   home page: <http://members.cruzio.com/~cap>  
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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### 54. [aprsspec] Re: Still more about Center and Range

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Sun, 14 May 2000 08:39:47 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83747-2000.05.14-03.40.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
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In article <LYR14779-83698-2000.05.13-23.39.33--Ian.Wade#care4free.net@lists.tapr.org>, Jim Wagner <wagnerj@proaxis.com> writes

>Group -

>

>I don't think that I am getting through!

>

>The spec says (and Bob seems to concur) the following:

>

>-----

>APRS is a tactical geographical system, and users need to be able to  
>relate map view in a non-ambiguous way. Thus all map displays should  
>have a meaningful legend to convey the scale of the map view to the  
>user.

>-----

>

>When one user has a view that encompasses 100mi X 800 mi and another has a  
>view that encompasses 100mi X 100mi, they have, by the definition Bob has  
>been presenting, the same Range.

As I said yesterday, I think this definition is wrong.

>

>I assert that this is the very opposite of a "non-ambiguous way". Even the  
>change to "nearest edges" does not solve it. Consider one user with a view  
>100mi (N/S) X 800mi (E/W) and the second with a view 800mi N/S and 100mi  
>E/W. These users have the same Range but see vastly different information.

Agreed, Jim. I think the basic problem here is distinguishing between a  
\*display\* view (i.e. what is visible in a window on the screen) and the  
\*on-the-ground\* view.

Specifying a display view is meaningless. Anybody can choose any  
size/shape for their window, and can pan/zoom in that window to any  
extent. What is visible in that view is totally at the whim of the user,  
can change from instant to instant, and cannot be communicated in any  
useful way to any other user.

Specifying an on-the-ground view is simple, unique and unambiguous: e.g.  
Y/X and R. Everyone is referring to the same piece of ground. How they  
choose to display that piece of ground is an entirely separate matter,  
but it's still the same piece of ground. The on-the-ground view has  
nothing to do with whether a circle (or rectangle) touches the  
top/bottom of the window.

>

>Why the hangup with a "circle"? We are not dealing with artillery or  
>rockets or torpedos. We are not confining ourselves to non-digipeated  
>signals. It takes only one more number conveyed to provide a full,  
>unambiguous description. Why is this a problem?

>

>Why not do what the statement asserts: "able to relate map views in an  
>unambiguous way". Anything other than four coordinates of your choice simply  
>does not give an unambiguous description of a view. And any four, in an  
>orthogonal coordinate system, are translatable to any other four. Lets face  
>up to the world of real-world geometry and quit trying to cut corners. Why  
>is one more number such a problem?

>

Specifying a rectangular on-the-ground view with 4 parameters is not a  
fundamental problem; e.g. center Y/X, Y offset from the center  
(equivalent to the radius of Bob's range circle) and X offset from the  
center. The only difficulty today is that the spec describes the  
\*current\* APRS state, and current APRS software (as far as I know) does  
not support a 4-parameter definition of "map view".

>I can see only two ways for Bob's three-quantity description to be sufficient:

>

>(1) There is a region marked out on the view which says "this is the region  
>visible by others who have the same Range you have."

i.e. the region INSIDE the range CIRCLE.

>  
>(2) Force views to be (geographically) "square".

I don't think anyone ever intended that.

-----  
To re-focus:

All of this discussion relates to a section in the "APRS Design Philosophy" chapter of the specification. This is not the place for specifics on how a "map view" is defined or represented.

The only thing that is important in this section is the idea of common agreement between users on defining a particular piece of ground. How that piece is defined is an \*operational\* issue. Whether it is a circle, rectangle, ellipse or polygon is outside the scope of the on-the-air APRS spec -- nothing is transmitted on-air that defines the piece of ground.

Accordingly, I propose the following as a replacement for the existing "Map Views and Range Scale" section:

~~~~~  
Viewing Geographical Areas of Common Interest

=====

APRS is a tactical geographical system. To maximize its operational effectiveness, users need to have an unambiguous understanding of geographical areas of common interest when communicating with each other.

This means that users need to be able to specify the extent of such areas (for example, inside a circle of particular radius centered on a particular lat/long position, or inside a rectangle with particular corner lat/long coordinates). Once a user has specified a geographical extent, other users viewing the same extent can be sure they are looking at exactly the same geographical area.

The method of defining geographical extents is an operational issue, outside the scope of this APRS Protocol Reference -- nothing related to extents is transmitted on-air. However, it is expected that APRS user software will provide easy-to-use tools for defining and viewing extents, and that operational procedures for communicating those extents to other users will be put in place.

~~~~~  
How does that look?

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification  
\*\*\*\*\* Third draft now available \*\*\*\*\*

--  
+-----+  
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |  
| email: g3nrw@arrl.net |  
| |  
| APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/Faprswg.html> |  
| APRS DECODER: <http://www.netro.co.uk/aprs.htm> |  
+-----+

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---

## 55. [aprsspec] Re: Reference View

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Sun, 14 May 2000 10:15:54 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83751-2000.05.14-04.19.41--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83751-2000.05.14-04.19.41--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR14779-83725-2000.05.14-00.34.20--Ian.Wade#care4free.net@lists.tapr.org](mailto:LYR14779-83725-2000.05.14-00.34.20--Ian.Wade#care4free.net@lists.tapr.org)>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes  
>Group -  
>



>I like Ian's suggestion of a "Reference View".  
>

Except that I now want to withdraw that suggestion, for two reasons:

1. Looking back through Jim's earlier messages in this discussion, I am now more firmly of the view <groan> that the word "view" should only apply to what you see in a display window -- "this is my view of this piece of ground, and I can pan/zoom/change the window any way I want to get a completely different view of the same piece of ground". In other words, the word "view" is irrelevant to this discussion (and therefore irrelevant to the spec).
2. By suggesting the specific term "Reference View", I am imposing a definition on something that is not directly to do with this specification, but will possibly be defined in \*other\* specifications. I don't have the right to do that.

In another message today I proposed new text which includes the words "geographical extent". I think that overcomes the 2 objections above.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I09ISX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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---

## 56. [aprsspec] Re: More about Center and Range

From: Cap Pennell <cap@cruzio.com>  
Date: Sun, 14 May 2000 02:58:21 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83756-2000.05.14-05.02.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At 05:16 AM 5/13/2000, Ian Wade wrote:

><snip>

>The Y/X and R values define the "Reference View" completely and  
>unambiguously.

>

>The "Reference View" is not in any way related to the display window/screen  
>geometry-- if the range circle happens to touch the top/bottom edges of the  
>window, that is just a coincidence.  
<snip>

At 10:31 PM 5/13/2000, Jim Wagner wrote:

>Group -

>

>I like Ian's suggestion of a "Reference View".

<snip>

At 02:15 AM 5/14/2000, Ian Wade wrote:

<snip>

>Except that I now want to withdraw that suggestion, for two reasons:

>

>1.<snip>

>2.<snip>

>

>In another message today I proposed new text which includes the words  
>"geographical extent". I think that overcomes the 2 objections above.

Now I'd like to venture:

Viewing Geographical Areas of Common Interest

=====

APRS is a tactical geographical system. To maximize its operational effectiveness, users need to have an unambiguous understanding of

geographical areas of common interest when communicating with each other.

This means that users need to be able to specify the extent of such areas. For example, the area inside a circle of particular radius centered on a particular lat/long position could be specified. When communicating about this circular area's extent, three parameters would be required:

- 1 the latitude of the center of the area
- 2 the longitude of the center of the area
- 3 the horizontal distance from the center to the perimeter of the circle.

Once a user has specified a geographical extent, other users viewing the same extent can be sure they are looking at exactly the same geographical area.

The method of defining geographical extents is an operational issue, outside the scope of this APRS Protocol Reference -- nothing related to extents is transmitted on-air. However, it is expected that APRS user software will provide easy-to-use tools for defining and viewing extents, and that operational procedures for communicating those extents to other users will be put in place.

73, Cap KE6AFE

--  
Cap Pennell  
Santa Cruz, CA 95062-1002      3658.93N/12200.91W [CM86xx]  
email: cap@cruzio.com    home page: <http://members.cruzio.com/~cap>  
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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---

## 57. [aprsspec] Soundboard Aprs?

From: Donald Tambeau <[ve3hol@rac.ca](mailto:ve3hol@rac.ca)>  
Date: Sun, 14 May 2000 23:59:27 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-83802-2000.05.14-11.00.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Several days ago, some brave soul asked on this list if an APRS sound board program compatible with APRS existed. If anybody answered him I missed it. Sound board programs now read RTTY, PSK31, PACTOR...at least one program I know decodes but does not transmit packet. It would sure would be great to eliminate one piece of gadgetry from the seat of the truck.

As for the present thread on "reference view" "circles view" "map view" "rectangular view" guys, guys...you lost me a long long time ago!

Now if I could only get rid of my TNC, maybe my wife could sit here in the cab instead of back in the box! Hi

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---

## 58. [aprsspec] Re: Still more about Center and Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 14 May 2000 16:08:36 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-83839-2000.05.14-15.11.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 13 May 2000, Jim Wagner wrote:

- > for Bob's three-quantity description to be sufficient:
- >
- > (1) There is a region marked out on the view which says "this is the region
- > visible by others who have the same Range you have."
- >
- > I, as a user and programmer, will not accept the second. The first is
- > nearly trivial but is a pain in the rear to have to do when its not

> necessary and when (almost) nobody else does it.

Your claim about "almost nobody" is completely wrong and shows a new-comers bias towards today's shrink-wrapped "mapping" packages developed by software programmers and not by anyone with a background in navigation or radio location. ALL navigation and radio location systems prior to the recent spurt of "MAPS" for "windows" use the concept of "RANGE SCALE". This dates back to 1945 or so. It is technically, sound, it is unambiguous, is familiar to the millions of technicians and operators who have used it throughout these 55 years of use and you will find it on all tactical displays of all RADAR and NAVIGATION systems both military, commercial, Aviation, and pleasure boats.

RANGE SCALE is a fundamental concept regardless of how distorted some programmers want to display their map views. That is why it is in the APRS spec, to simply serve as a simplest form description so that everyone has an unambiguous reference frame. How you convey it to your users is up to you. Several methods are in use:

- 1) Range circle
- 2) Legend bar across bottom or side equal in length to "range scale"
- 3) Numeric display of current "RANGE SCALE" somewhere on screen.

etc

Bob

---

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---

## 59. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 14 May 2000 17:28:37 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-83860-2000.05.14-16.30.31--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-83860-2000.05.14-16.30.31--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Ian's definition of a "reference view" (later withdrawn) has come full circle back to square one. The "term" you are looking for to describe this unambiguous "map/view/reference/geographical area, ETC) is "RANGE SCALE". This is a fundamental descriptor with over 50 years of precedence and common usage.

But Jim's interpretations have pointed out that it did not come across to the reader as clearly as it could have. Thus, I have only slightly re-worded this paragraph to take advantage of all the recent discussion and to hopefully make this concept clear.

```
> -----
> APRS is a tactical geographical system, and users need to be able to
> relate map view in a non-ambiguous way. Thus all map displays should
> have a meaningful legend to convey the "range scale" of the map view to
> the user.
>
> Thus when communicating about such views, two parameters are
> required: CENTER and RANGE SCALE.
>
> In this context, the Range Scale of any map view is the approximate
> range (in nautical miles, statute miles or km) of the largest circle
> that will conveniently fit in that map view. This convention gives all
> software users a common basis for describing tactical map views (at
> whatever Range Scale or center is in use).
> =====
```

Notice that I changed from LAT/LONG to just CENTER. What one uses to reference the center of a view does not need to be so restrictive.

I can say "I'm looking at a range scale of 128 miles around Florence Alabama, and I don't see him anywhere". Or "I'm looking around me at 16 miles and can't find him"... In these cases, the "center" is defined in terms other than LAT/LONG.

Also, for your background, Range Scales have always traditionally been integer powers of 2. Usually from about 0.25 miles out to 256 miles. In the 1960's with the advent of computer driven tactical displays including

networked target data from other platforms this was extended to 1024 miles. With the worldwide nature of APRS, APRSdos extends that down to .0625 and up to 8192 miles.

de WB4APR, Bob

---

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---

## 60. [aprsspec] Re: More about Center and Range

From: "Neil Johnson" <njohnson@interl.net>  
Date: Sun, 14 May 2000 18:21:28 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83872-2000.05.14-18.23.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I'm confused here, I think using the range circle makes perfect sense.

The problem with the rectangle is it assumes that there is a difference in the X and Y scales.

I don't think that is right. When I look at a map 1 inch (1 cm, whatever) equals 1 mile ( 1 km) IN ANY DIRECTION.

To me changing the x or y scaling independent of each other would lead to confusion over distances ( that wonderful map projection stuff notwithstanding).

I've noticed that the map window in Street Atlas works this way. When you resize the map window it change the area of the map viewed, not changing the scale (SA puts a little bar "|-----|" = 1.0 mile in the status bar of the map window).

Neil Johnson  
njohnson@interl.net  
<http://www.interl.net/~njohnson>

-----Original Message-----

From: Bob Bruninga <bruninga@nadn.navy.mil>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Date: Sunday, May 14, 2000 4:28 PM  
Subject: [aprsspec] Re: More about Center and Range

>Ian's definition of a "reference view" (later withdrawn) has come full  
>circle back to square one. The "term" you are looking for to describe  
>this unambiguous "map/view/reference/geographical area, ETC) is "RANGE  
>SCALE". This is a fundamental descriptor with over 50 years of  
>precedence and common usage.

>

>But Jim's interpretations have pointed out that it did not come across to  
>the reader as clearly as it could have. Thus, I have only slightly  
>re-worded this paragraph to take advantage of all the recent discussion  
>and to hopefully make this concept clear.

>

>> -----  
>> APRS is a tactical geographical system, and users need to be able to  
>> relate map view in a non-ambiguous way. Thus all map displays should  
>> have a meaningful legend to convey the "range scale" of the map view to  
>> the user.

>>

>> Thus when communicating about such views, two parameters are  
>> required: CENTER and RANGE SCALE.

>>

>> In this context, the Range Scale of any map view is the approximate  
>> range (in nautical miles, statute miles or km) of the largest circle  
>> that will conveniently fit in that map view. This convention gives all  
>> software users a common basis for describing tactical map views (at  
>> whatever Range Scale or center is in use).

>> =====

>

>Notice that I changed from LAT/LONG to just CENTER. What one uses to  
>reference the center of a view does not need to be so restrictive.

>

>I can say "Im looking at a range scale of 128 miles around Florence  
>Alabama, and I dont see him anywhere". Or "Im looking around me at 16  
>miles and cant find him"... In these cases, the "center" is defined in  
>terms other than LAT/LONG.  
>  
>Also, for your background, Range Scales have always traditionally been  
>integer powers of 2. Usually from about 0.25 miles out to 256 miles. In  
>the 1960's with the advent of computer driven tactical displays including  
>networked target data from other platforms this was extended to 1024  
>miles. With the worldwide nature of APRS, APRSdos extends that down to  
>.0625 and up to 8192 miles.  
>  
>de WB4APR, Bob  
>  
>  
>  
>----

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>

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---

## 61. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 14 May 2000 20:16:53 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83884-2000.05.14-19.19.25--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 14 May 2000, Neil Johnson wrote:

> I've noticed that the map window in Street Atlas works this way. When you  
> resize the map window it changes the area of the map viewed, not  
> changing the scale (SA puts a little bar "|-----|" = 1.0 mile in  
> the status bar of the map window).

Yep, and the smaller that gets the harder it is to estimate distances  
across the full map screen. When that little legend is only 1/4 inch long  
on a 12 inch screen, it is very hard to estimate things like "looks like  
"x" is about 28 miles from me"...

Whereas if you are on the 32 mile RANGE SCALE and the guy is near the  
edge, then it is far easier to estimate "28" miles without a ruler...  
Thats why I put a RANGE SCALE Legend like this at the bottom of all  
APRSdos map views:

|<-----32 statute miles----->|

Which always extends from the center to the right edge of the Range Scale  
circle. In this case, I am on the 32 mile range scale. If I have  
selected METRIC, then this is shown as:

|<----- 51 Killometers ----->|

de WB4APR, Bob

---

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## 62. [aprsspec] APRS Draft 1.01m Notes

From: "Tj Johnston" <n4uyq@arrl.net>  
Date: Mon, 15 May 2000 01:10:17 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83940-2000.05.15-00.12.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

page 14: Version numbers - Should we also include Alinco, as in APAxxx??? Their new radio has a tnc  
built in and claims to support  
APRS, but to what extent, I don't know.

=====

Tj Johnston, N4UYQ ICQ#3134626

Hopewell, VA - Prince George Co. ARES/RACES  
Eastern Virginia APRS Group (EVA) - Sec/Treas.  
EVA Homepage: <http://www.qsl.net/eva/>  
APRSdigi Homepage: [www.qsl.net/n4uyq/aprsdigi.htm](http://www.qsl.net/n4uyq/aprsdigi.htm)  
=====

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### 63. [aprsspec] A Suggestion

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Sun, 14 May 2000 23:39:53 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-83951-2000.05.15-01.42.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello Group -

I think what we have here is fundamentally divergent view of technology. I, frankly, could care less what X years of "tradition" has used to describe something, when it does not fit how modern people actually wish to use something.

So, I am willing to put this to rest. I see no resolution.

But, I do have a suggestion for the next rev of APRS standard:

A message format (perhaps as a group "announcement" or "bulletin" - so it can be suitably filtered) containing the necessary coordinates to fully describe a standard "group view". This could contain any set of four coordinates and any member of the group could choose this to automatically set the bounds of their "group view".

This would solve many of the tactical problems which I think Bob is attempting to address. It could be cross-map and cross-application and cross-platform (provided the programmers supported it); there is no fundamental reason I can see why it could not.

Cheers,

Jim Wagner  
Oregon Research Electronics

-----  

|                                                              |                            |
|--------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a> | Tangent, Oregon 97389      |
| KA7EHK@KC7KFE.OR.USA.NOAM                                    | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>       | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

---  
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---

### 64. [aprsspec] Re: More about Center and Range

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Mon, 15 May 2000 07:48:45 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-83952-2000.05.15-01.50.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-83860-2000.05.14-16.30.31--Ian.Wade#care4free.net@lists.tapr.org>, Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes  
>Ian's definition of a "reference view" (later withdrawn) has come full  
>circle back to square one. The "term" you are looking for to describe  
>this unambiguous "map/view/reference/geographical area, ETC) is "RANGE  
>SCALE". This is a fundamental descriptor with over 50 years of  
>precedence and common usage.

I accept that "Range Scale" has been around for a long time, and is associated with a circle that covers a geographical piece of ground.

>  
>But Jim's interpretations have pointed out that it did not come across to

>the reader as clearly as it could have.

Jim has said basically that a circle is not the \*only\* way to define a piece of ground.

```
> Thus, I have only slightly
>re-worded this paragraph to take advantage of all the recent discussion
>and to hopefully make this concept clear.
>
>> -----
>> APRS is a tactical geographical system, and users need to be able to
>> relate map view in a non-ambiguous way. Thus all map displays should
>> have a meaningful legend to convey the "range scale" of the map view to
>> the user.
>>
>> Thus when communicating about such views, two parameters are
>> required: CENTER and RANGE SCALE.
>>
>> In this context, the Range Scale of any map view is the approximate
>> range (in nautical miles, statute miles or km) of the largest circle
>> that will conveniently fit in that map view. This convention gives all
>> software users a common basis for describing tactical map views (at
>> whatever Range Scale or center is in use).
>> =====
```

The main thing I don't like about this is the term "map view". A "map view" is simply a "view of a map". As I said yesterday, a user can change that view instant by instant -- views are not fixed as they used to be in radar systems. A "view" relates only to what is seen in a display window (that definition has been around for a long time too), and does not necessarily have any relationship to the "range scale".

Also, you imply that center/range scale is the \*only\* way to define an area of common interest. Bearing in mind Jim's comments, I think this is too restrictive here, particularly as all of this is an operational issue anyway, not directly related to this spec. Methods of defining areas of common interest belong in another (as yet unwritten) spec.

Hence, merging your thoughts with mine, here is a new replacement section:

#### ~~~~~ Viewing Geographical Areas of Common Interest

=====

APRS is a tactical geographical system. To maximize its operational effectiveness, users need to have an unambiguous understanding of geographical areas of common interest when communicating with each other.

The usual way of doing this is for users to specify the geographical center and approximate radius of a circle that covers the area of interest. The radius of the circle (in nautical miles, statute miles or km) is known as the "range scale". This convention gives all users a common basis for describing tactical areas of interest, at whatever center/range scale is in use.

The use of center/range scale, or other methods of defining areas of common interest, is an operational issue, outside the scope of this APRS Protocol Reference -- nothing related to these areas is transmitted on-air. However, it is expected that APRS user software will provide easy-to-use tools for defining and viewing these areas, and that operational procedures for communicating them to other users will be put in place.

~~~~~

```
>
>Notice that I changed from LAT/LONG to just CENTER. What one uses to
>reference the center of a view does not need to be so restrictive.
>
>I can say "Im looking at a range scale of 128 miles around Florence
>Alabama, and I dont see him anywhere". Or "Im looking around me at 16
>miles and cant find him"... In these cases, the "center" is defined in
```

>terms other than LAT/LONG.

Exactly. That's why I phrased my second para in the new replacement section the way I did.  
>

>Also, for your background, Range Scales have always traditionally been  
>integer powers of 2. Usually from about 0.25 miles out to 256 miles. In  
>the 1960's with the advent of computer driven tactical displays including  
>networked target data from other platforms this was extended to 1024  
>miles. With the worldwide nature of APRS, APRSdos extends that down to  
>.0625 and up to 8192 miles.

OK, but once again this is an operational issue, outside the scope of this specification.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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---

## 65. [aprsspec] Re: A Suggestion

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Mon, 15 May 2000 07:58:15 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-83953-2000.05.15-02.01.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-83951-2000.05.15-01.42.26--Ian.Wade#care4free.net@lists.tapr.org>, Jim Wagner <wagnerj@proaxis.com> writes

>Hello Group -

>

>I think what we have here is fundamentally divergent view of technology. I,  
>frankly, could care less what X years of "tradition" has used to describe  
>something, when it does not fit how modern people actually wish to use  
>something.

>

>So, I am willing to put this to rest. I see no resolution.

But please look at my new suggested text for the replacement section (mailed to this list Monday morning UTC). I think it encapsulates both your views and Bob's views in a compatible manner, saying essentially that center/range scale is just \*one\* way of doing this, and that whatever way is used, the whole matter is an operational issue anyway, outside the scope of this spec.

>

>But, I do have a suggestion for the next rev of APRS standard:

>

>A message format (perhaps as a group "announcement" or "bulletin" - so it  
>can be suitably filtered) containing the necessary coordinates to fully  
>describe a standard "group view". This could contain any set of four  
>coordinates and any member of the group could choose this to automatically  
>set the bounds of their "group view".

>

>This would solve many of the tactical problems which I think Bob is  
>attempting to address. It could be cross-map and cross-application and  
>cross-platform (provided the programmers supported it); there is no  
>fundamental reason I can see why it could not.

Agreed.



73  
 Ian, G3NRW  
 Technical Editor, APRS Protocol Specification  
 \*\*\*\*\* Third draft now available \*\*\*\*\*

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+

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```

## 66. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>  
 Date: Mon, 15 May 2000 11:43:40 -0400 (EDT)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-84041-2000.05.15-10.45.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

On Mon, 15 May 2000, Ian Wade wrote:

> I accept that "Range Scale" has been around for a long time, and is  
 > associated with a circle that covers a geographical piece of ground.  
 > Jim has said basically that a circle is not the \*only\* way to define a  
 > piece of ground.

True, but the APRS SPEC is defining the standard for APRS. As such, APRS needs a standard default way of referring to that common area. And that is RANGE SCALE. Anyone that has been following this discussion sees how absolutely confusing, and ambiguous these discussions can be unless everyone has a common reference. That is the purpose of the APRS SPEC.

Have any of you ever listened to the confusion that reigns as soon as users begin trying to talk about a geographical area, when one is using WinAPRS, one is using APRS+SA, and one is using APRSdos? Its babble. And NO RESOLUTION IS REACHED. They just Argue, each clinging to his own view! WE CANNOT ALLOW THIS TO HAPPEN WHEN APRS IS SUPPOSED TO PROVIDE A STANDARD FOR TACTICAL COMMUNICATION.

This discussion of Rectangles and views is exactly why we must have a single default reference. AND it MUST be in the SPEC. Ian's proposed wording is too watered down and will not accomplish the objective. I have revised Ian's proposed wording to meet these objectives.

```
> COMMUNICATING Geographical Areas of Common Interest
> =====
> APRS is a tactical geographical system. To maximize its operational
> effectiveness, users need to have an unambiguous understanding of
> geographical areas of common interest when communicating with each
> other.
>
> In APRS, this is done by reference to a CENTER and RANGE. These
> specify the geographical center and approximate radius of a circle that
> covers the area of interest. The radius of the circle (in nautical
> miles, statute miles or km) is known as the "range scale". This
> convention gives all users a simple common basis for describing tactical
> areas of interest, at whatever center/range scale is in use.
>
> For interoperability among all platforms and modes of communications, it
> is expected that APRS user software will provide easy-to-use tools for
> defining and viewing these areas of tactical interest.
> ~~~~~
```

If Jim wants to propose that users in the future may refer to the 4 corners of an area, that is OK for later versions, but I doubt any voice users are going to say...

"Im looking at a box with the following corners of LAT/LONG and LAT/LONG and LAT/LONG and LAT/LONG and I dont see the truck anywhere.."

Compared to "Im looking out 32 miles from me and dont see him"...

Or "Does anyone see an Ambulance within 10 miles of the fairground???"

de WB4APR, Bob

---

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---

## 67. [aprsspec] Re: More about Center and Range

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Mon, 15 May 2000 17:07:42 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84048-2000.05.15-11.10.03--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84048-2000.05.15-11.10.03--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[Pine.GS0.4.05L.10005151117270.13834-100000@arctic](mailto:Pine.GS0.4.05L.10005151117270.13834-100000@arctic)>, Bob  
Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)> writes

```
>I have
>revised Ian's proposed wording to meet these objectives.
>
>> COMMUNICATING Geographical Areas of Common Interest
>> =====
>> APRS is a tactical geographical system. To maximize its operational
>> effectiveness, users need to have an unambiguous understanding of
>> geographical areas of common interest when communicating with each
>> other.
>>
>> In APRS, this is done by reference to a CENTER and RANGE. These
>> specify the geographical center and approximate radius of a circle that
>> covers the area of interest. The radius of the circle (in nautical
>> miles, statute miles or km) is known as the "range scale". This
>> convention gives all users a simple common basis for describing tactical
>> areas of interest, at whatever center/range scale is in use.
>>
>> For interoperability among all platforms and modes of communications, it
>> is expected that APRS user software will provide easy-to-use tools for
>> defining and viewing these areas of tactical interest.
>> ~~~~~
>
```

So be it. I have plugged this into the spec.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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---

## 68. [aprsspec] Re: A Suggestion

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 15 May 2000 12:21:56 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84049-2000.05.15-11.23.54--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84049-2000.05.15-11.23.54--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 15 May 2000, Ian Wade wrote:

```
> >I think what we have here is fundamentally divergent view of technology.
```

It has nothing to do with technology. It has to do with human  
communications in describing their VIEW, INDEPENDENT OF

TECHNOLOGY! It is the cross platform / cross medium conveyance of unambiguous information that I am concerned with.

Who have you heard refer to an area on a voice repeater by giving the LAT/LONG of the corners of the box? I have never heard any... But I do hear ALL THE TIME, comments like "He is within 10 miles of there"... etc... Or "I'm 57 miles outside of Denver"...

> >A message format (perhaps as a group "announcement" or "bulletin" - so it  
> >can be suitably filtered) containing the necessary coordinates to fully  
> >describe a standard "group view". This could contain any set of four  
> >coordinates and any member of the group could choose this to automatically  
> >set the bounds of their "group view".

This paragraph shows a total misunderstanding of the concepts here. We are NOT TRYING to force a common "group view" AT ALL. That is why I don't like this movement of Ians's to a REFERENCE VIEW nor to a GEOGRAPHICAL AREA. It is diverging from the fundamental concept of being able to describe MY VIEW. And that means my IMMEDIATE, THIS-Instant view in a SIMPLE and UNAMBIGUOUS WAY.

When I say I am looking at Washington DC on the 128 mile range scale this has NOTHING to do with what anyone else is using, or seeing, or interested in... But it tells \*YOU\* THE LISTENER, WHAT \*I\* SEE. This is the concept I am trying to get across. We will all have countless views at ANY INSTANT in time. But every such VIEW must have a way to describe it SUSCINCTLY.

If I say I am looking at Washington DC on the 128 mile RANGE SCALE and Joe is looking at Baltimore on the 64 mile range scale, then anyone with a minds eye can "see" their common areas of coverage...

I dont know anyone that can visualize the common area of two Boxes specified by a total of 8 LAT/LONG pairs. That is rediculous and will never be used by voice communicators.

So I am going back to my original definition. That we are talking about a PARAMETER to describe a "VIEW". We may both be interested in the whole state of Maryland during an STATE emergency, but at any instant, I must be able to say suscinctly and unambiguously where I AM LOOKING and to what SCALE.

There is no other simple method that fulfills this requirement. Period. If we want, I have no objection to allowing differing "N/S and E/W" range scales to describe oblong views if someone finds that useful.

Here is that wording...

> -----  
> APRS is a tactical geographical system, and users need to be able to  
> relate their map view in a non-ambiguous way. Thus all map displays  
> should have a meaningful legend to convey the "range scale" of the map  
> view to the user.  
>  
> Thus when communicating about such views, only two parameters are  
> needed: CENTER and RANGE SCALE.  
>  
> In this context, the Range Scale of any map view is the approximate  
> range (in nautical miles, statute miles or km) from the center to  
> to the nearest edge. This convention gives all users a common basis  
> for describing tactical map views in a suscinct way.  
>  
> In cases where the user needs to describe a rectangular view in more  
> detail, the range scale can be broken into a N/S and an E/W component.  
> =====

de WB4APR, Bob

---

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---

## 69. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 15 May 2000 12:26:13 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-84052-2000.05.15-11.28.24--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

On Mon, 15 May 2000, Ian Wade wrote:

```
> > COMMUNICATING Geographical Areas of Common Interest
> > =====
> > ~~~~~
>
> So be it. I have plugged this into the spec.
```

Ah, but now I have renigged. I see now that we are still talking about two different things. SO I am back to describing VIEWS which was m y original intent... Sorry... Your logic was clever and lead me off track.... :-)

But now that I see where we have arrived... it ain't where I was headed... so to speak.

Bob

---

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## 70. [aprsspec] Why Why do do I I keep keep getting getting messages messages twice twice ? ?

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Mon, 15 May 2000 18:39:13 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84069-2000.05.15-12.40.46--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

This list keeps sending me two copies of some messages.

Can someone fix it please.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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---

## 71. [aprsspec] Re: More about Center and Range

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Mon, 15 May 2000 18:34:10 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84070-2000.05.15-12.41.02--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-84052-2000.05.15-11.28.24--Ian.Wade#care4free.net@lists.tapr.org>, Bob Bruninga <bruninga@nadn.navy.mil> writes

```
>Ah, but now I have renigged. I see now that we are still talking about
>two different things. SO I am back to describing VIEWS which was m y
>original intent... Sorry... Your logic was clever and lead me off
>track.... :-)
```

There was certainly no intention of trying to be clever! I just want to remove the confusion that your original version caused.

Problem is, we have now returned to the reason why Jim got confused in the first place. Bottom line: the term "map view" is totally irrelevant, confusing and meaningless in this context.

I look at a map, and decide the center/range scale. I tell you the center/range scale. We now both understand exactly which bit of \*ground\* we are talking about. That's the object of the exercise.

But I do \*not\* tell you which bit of your \*map\* to \*view\*. Your "map view" is whatever part of your \*map\* you choose to view. You can pan/zoom/change your window size at any time to get a different "map view". Your "map view" may not even contain \*any\* of the bit of ground we agreed on. All of this is a display issue and nothing to do with the spec.

A "view" is what you see in a window. Nothing more. It is \*nothing\* whatsoever to do with the center/range scale area.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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## 72. [aprsspec] RE: Why Why do do I I keep keep getting getting messages messages twice twice ? ?

From: "Rob Wittner" <rmw@rwa-inc.com>

Date: Mon, 15 May 2000 14:08:12 -0400

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-84074-2000.05.15-13.09.44--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Is Is someone someone perhaps perhaps replying replying directly directly to to Ian Ian as as well well as as to to the the list list ? ?

-Rob

-Rob

Ian, if you get two of these messages, you'll know the answer...

-----Original Message-----

From: bounce-aprsspec-11697@lists.tapr.org

[mailto:bounce-aprsspec-11697@lists.tapr.org]On Behalf Of Ian Wade

Sent: Monday, May 15, 2000 1:39 PM

To: APRS Spec Discussion List

Subject: [aprsspec] Why Why do do I I keep keep getting getting messages messages twice twice ? ?

This list keeps sending me two copies of some messages.

Can someone fix it please.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

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---

### 73. [aprsspec] Re: aprsspec digest: May 14, 2000

From: James Wagner <ka7ehk@yahoo.com>  
Date: Mon, 15 May 2000 12:00:09 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84078-2000.05.15-14.02.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Group -

With some trepidation, I need to respond to Bob's response of 5-14-00. I will try, very hard, to avoid assertions about character or personality. I hope that I am successful! If I am not successful, please remember that no malice is intended. Here, first, is the statement that triggered the response:

>> I, as a user and programmer, will not accept the second. The first is  
>> nearly trivial but is a pain in the rear to have to do when its not  
>> necessary and when (almost) nobody else does it.

And, here is Bob's response:

>Your claim about "almost nobody" is completey wrong and shows  
>a new-comers  
>bias towards todays shrink-wrapped "mapping" packages developed by  
>software  
>programmers and not by anyone with a background in navigation or radio  
>location. ALL navigation and radio location systems prior to the  
>recent  
>spurt of "MAPS" for "windows" use the concept of "RANGE SCALE". This  
>dates back to 1945 or so. It is technically, sound, it is  
>unambiguous, is  
>familiar to the millions of technicians and operators who have used  
it  
>throughout these 55 years of use and you will find it on all tactical  
>displays of all RADAR and NAVIGATION systems both military,  
commercial,  
>Aviation, and pleasure boats.

>RANGE SCALE is a fundamental concept regardless of how distorted some  
>programmers want to display their map views. That is why it is in the  
>APRS spec, to simply serve as a simplest form description so that  
>everyone  
>has an unambiguous reference frame. How you convey it to your users  
>is up to you. Several methods are in use:  
>  
>1) Range circle  
>2) Legend bar across bottom or side equal in length to "range scale"  
>3) Numeric display of current "RANGE SCALE" somewhere on screen.

I found this assertion quite incredible.

To provide a "reality check", I surveyed 10 acquaintances. All are map users and use maps in ways in which their life, or the life of someone else, depends on it.

3 are pilots (all private, one IFR), one originally licensed in 1975.  
2 mountain rescue volunteers  
2 mountain climbers who are not involved in mountain rescue  
1 sea kayaker who uses coastal navigation charts  
1 mountain biker who leads bike tours in Hawaii  
1 County Sheriff's Deputy who works with search and rescue  
1 Aquatics Biologist/Ham (who does flood hazard assessment, among other things)  
2 4-Wheel Drive search/rescue people (2 hams)  
2 Backpackers (1 ham)

[note: this adds to more than 10 because some people fall into several categories]. One is former military (Deputy). Most are under 50 and all are under 60. A few are under 30. Not one of these is among the "millions of technicians and operators" described by Bob.

1. Not one has heard of "Range Scale" associated with a map.
2. Two (other than pilots) have used a compass for navigation purposes.
3. Two have tried to find their location on a paper map using GPS.
4. All know that their "good" maps have lat/lon scale on map edges.
5. When explained, all pilots relate "Range Scale" to OMNI "rose" printed on their nav charts. But, when confronted with the idea that "Range Scale" somehow described the size, extent, etc., of a map, all responded with a "blank" and/or "What good is it?"
6. Not one of the pilots has flown an aircraft with a Range-Scale display in the cockpit. Single-engine private aircraft don't usually carry RADAR.
7. One non-pilot, when prodded, did associate it with a circular RADAR display.
8. All are computer users.
9. Several were experienced DOS users but not one willingly uses it now.
10. When asked about software to view "maps" on a computer screen, all preferred a windows-oriented environment where they could have other windows from other applications present, allowing them, for example, to record notes related to the situation at hand.

Folks, these are the real-world people who we have to work with in real-world emergencies. These are also representative, I believe, of most new-comers to ham radio, and thus, fairly representative of in-coming APRS users. To think otherwise, it seems to me, leads us only down the path of narcissism. Do we really want to develop yet another tool which has little real-world use and is thus, hardly more than a toy for our ham amusement.

The (repeated here) assertion:

```
>shows a new-comers
>bias towards todays shrink-wrapped "mapping" packages developed by
>software programmers and not by anyone with a background in navigation
>or radio location.
```

is a real key to this discussion. People use mapping packages developed by software programmers (who else would develop the packages?) because they are easy to use. Yes, they are "biased"; they LIKE the software and they use what they like! To decry this situation is rather like decrying the lack of use of CW. It fails to recognize changes in technology and changes in the technology user-base. If we do not recognize this situation and fail to cope with maps "that can be stretched every which way", then APRS will go the way of other technologies which "were promising but never made it".

I, personally, DO have a background in navigation. But not military. My navigation is as a private pilot, mountain climber, & sometimes orienteer. To me, the idea of "Range Scale" is simply useless because it does not fit what people want to do with their tools.

To press the analogy, over 55 years of experience showed that tires needed inner tubes. Several hundred years of experience showed that wheels needed steel rims. Many years of experience showed that frequencies "down" from 2000 meters were useless. Lets not get caught up in the arguments about "what has been used for 55 years"!

To force the APRS display into the mold of RADAR, is, I believe, at the very least, short-sighted. We are clearly stuck with the existing definitions for now. However, they do not have to stay that way. A Version2 protocol should come out, just like AX.25 got revised early-on and became AX25L2V2. Display management should be high on the list of issues for APRS\_V2.

Respectfully,

Jim Wagner, KA7EHK

---

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<http://im.yahoo.com/>

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looking at unambiguously...

> But I do \*not\* tell you which bit of your \*map\* to \*view\*. Your "map  
> view" is whatever part of your \*map\* you choose to view.

Agreed absolutely.

> You can pan/zoom/change your window size at any time to get a different  
> "map view". Your "map view" may not even contain \*any\* of the bit of  
> ground we agreed on.

REMOVE any CONCEPT of the "ground we agreed on". That has nothing to do with this CENTER/RANGE concept. CENTER/RANGE is only a way of describing (quantifying) a VIEW from the SENDER's perspective. There is nothing required, assumed, or inferred on the part of the receiver to do anything with this data. But it is there, in an UNAMBIGUOUS way for his use if needed.

> All of this is a display issue and nothing to do with the spec.

I DISAGREE COMPLETELY. The APRS SPEC is a standard for APRS communications. The SPEC is full of such STANDARDS so that INFORMATION is conveyed UNAMBIGUOUSLY from the sender to the RECEIVER... The presence of MAP VIEWS throughout ALL versions of APRS software is the single most salient characteristic of APRS compared to all other PACKET radio.

THEREFORE, We MUST have a common, standard METRIC to describe those views to OTHERS as WE see them.... CENTER/RANGE-SCALE is that METRIC.

> A "view" is what you see in a window. Nothing more. It is \*nothing\*  
> whatsoever to do with the center/range scale area.

I disagree 100% completely! It \*is\* THE MEASURE, the way of QUANTIFYING the size of that VIEW. Nothing more, nothin less.... It will change as often as I change my VIEW. But no matter what it is at any instant, it is

- 1) Complete
- 2) Unambiguous
- 3) Simple
- 4) Well understood.
- 5) Concise

in describing what the SENDER wants to convey when he says...

"I am looking at "X" with a RANGE SCALE of "Y" and I see (or dont see) "Z"...

I say again, I know of no other METRIC that is as simple, concise, unambiguous, and well understood as the above. By including the provision for N/S and E/W range scales we can even describe the rectangular views as well..

And FINALLY, this is not some academic exercise. It is MY EXPERIENCE of 9 years of seeing APRS used in the FIELD to support events and REAL applications where OPERATOR CONFUSION runs RAMPANT between different operators trying to resolve the location of something that they BOTH see or DONT see on their respective SCREENS.

They MUST HAVE A COMMON WAY TO DESCRIBE the SIZE of WHAT THEY ARE LOOKING AT... Using CENTER and RANGE-SCALE is that WAY.

Just look at Jim's examples. This confusion happens ALL THE TIME...

de WB4APR, Bob

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## 76. [aprsspec] Re: aprsspec digest: May 14, 2000

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 15 May 2000 20:11:39 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84140-2000.05.15-19.13.39--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84140-2000.05.15-19.13.39--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 15 May 2000, James Wagner wrote:

> 1. Not one has heard of "Range Scale" associated with a map.

I am not talking about MAPS. I am talking about ELECTRONICALLY PRESENTED VIEWS of geographical data.

> 3. Two have tried to find their location on a paper map using GPS.

Yes, but WHAT method have they used to "COMMUNICATE by any other means" to tell someone else (remotely) in the blind about the "size and scale" of the map they are using? If they are using a 1:10,000 QUAD and someone else is using a EXXON State Highway map, then I bet dollars to DONUTS that they cannot make sense to each other about what they SEE on the map without CONVEYING the difference in their map views....

> 4. All know that their "good" maps have lat/lon scale on map edges.

To what scale? I have a chart of the East Coast of the USA with LAT/LONG, and I have a harbor chart of Annapolis with LAT/LONG and two "in the blind" users of these two maps will see NOTHING AT ALL in common...

> 5. When explained, all pilots relate "Range Scale" to OMNI "rose"  
> printed on their nav charts. But, when confronted with the idea  
> that "Range Scale" somehow described the size, extent, etc. of a  
> map, all responded with a "blank" and/or "What good is it?"

Its not a MAP. Its an "ELECTRONIC VIEW" which can range over 8 orders of magnitude of scale. Put two such pilots on two ends of TELEPHONE. Give one a SECTIONAL chart and one a RUNWAY chart of the local airport.. and ask them to talk about something they see on their chart. The FIRST Thing they will do when they realize they are looking at two different views is to somehow REFERENCE their chart to the OTHER guys chart. It may be subtle, but until they somehow communicate a REFERENCE, thew will be hopelessly confused...

> 6. Not one of the pilots has flown an aircraft with a Range-Scale  
> display in the cockpit. Single-engine private aircraft don't usually  
> carry RADAR.  
> 7. One non-pilot, when prodded, did associate it with a circular RADAR  
> display.  
> 8. All are computer users.

So, then, we have a pilot, looking at a MAP/CHART/VIEW in his aircraft and I see on my PC/MAP/WINDOW/VIEW a map of ARBITRARY size, scale and location.... How do I know what the PILOT is looking at when he asks if I see "X"? How far away is it? From Where? What SCALE is he viewing?

> 9. Several were experienced DOS users but not one willingly uses it  
> now.  
> 10. When asked about software to view "maps" on a computer screen, all  
> preferred a windows-oriented environment where they could have  
> other windows from other applications present, allowing them, for  
> example, to record notes related to the situation at hand.

Great. No problem, but HOW do they CONVEY what THEY are looking at to SOMEONE else?

> down the path of narcissism. Do we really want to develop yet another  
> tool which has little real-world use and is thus, hardly more than a  
> toy for our ham amusement.

The only alternative that you have offered to CENTER and RANGE to unambiguously describe a MAP VIEW is to require an 8 valued metric of the LAT/LONG of the four corners of the view.

I say that your proposal for the APRS common way to Quantify a VIEW by the LAT/LONG of the four corners is:

- 1) Not concise
- 2) Not easy to visualize in scope or scale
- 3) Not eaasy to refer to a central point of reference
- 4) Unwieldly and prone to grievous errors when passed by voice
- 5) Inconsistent with the STATION-CENTRIC physics of radio communication
- 6) etc...

> is a real key to this discussion. People use mapping packages developed  
> by software programmers (who else would develop the packages?) because  
> they are easy to use. Yes, they are "biased"; they LIKE the software  
> and they use what they like!

These are self-relevant APPLICATIONS. They are NOT used in a real-time, multi-user, multi-view, network of disjoint users all using a DIFFERENT map system and set of maps. I will BET that any such NETWORKED use where all users on the network need to communicate about WHAT They see on their georeference system will have SOMETHING like:

REGION  
MAP NAME  
MAP SCALE  
ZOOM FACTOR  
MAGNITUDE,  
or any of a number of other ways to communicate the SIZE of any particular VIEW among users..

If they dont, then they will.... once they try to let humans use them in an ON-AIR scenario...

> technology and changes in the technology user-base. If we do not  
> recognize this situation and fail to cope with maps "that can be  
> stretched every which way", then APRS will go the way of other  
> technologies which "were promising but never made it".

Stretch them any way you want. The CENTER and RANGE (allowing for a separate N/S and E/W component) still seems to me to be the simplest, most concise and most useful descriptor of a station-centric or object-centric or interest-centric view...

> To me, the idea of "Range Scale" is simply useless because  
> it does not fit what people want to do with their tools.

How then do you convey to a distant "dissinterested" observer what "map/view/scale/window" you are currently referring to?

> To force the APRS display into the mold of RADAR, is, I believe, at the  
> very least, short-sighted. We are clearly stuck with the existing  
> definitions for now.

But Jim, I think you have contributed greatly by causing us to expand the definition, to include a N/S and E/W component of range scale for maps that are not well suited to a single range descriptor. Also, you have forced me to clean up my wording and focus only on the concept of a single VIEW METRIC. I appologize for getting frustrated at not being able to get others to see such a clear and simple concept.

de WB4APR, Bob

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## 77. [aprsspec] Re: APRS Draft 1.01m Notes

From: "Tj Johnston" <[n4uyq@arrl.net](mailto:n4uyq@arrl.net)>  
Date: Mon, 15 May 2000 20:27:19 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84147-2000.05.15-19.29.28--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84147-2000.05.15-19.29.28--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Will variable-rate "Smart" beaconing be included in this spec? and if not, has a standard been set?

=====  
Tj Johnston, N4UYQ ICQ#3134626  
Hopewell, VA - Prince George Co. ARES/RACES  
Eastern Virginia APRS Group (EVA) - Sec/Treas.  
EVA Homepage: <http://www.qsl.net/eva/>  
APRSdigi Homepage: [www.qsl.net/n4uyq/aprsdigi.htm](http://www.qsl.net/n4uyq/aprsdigi.htm)  
=====

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## 78. [aprsspec] Re: aprsspec digest: May 14, 2000

From: David VanHorn <dvanhorn@cedar.net>  
Date: Mon, 15 May 2000 19:12:30 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84148-2000.05.15-19.29.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----  
Hash: SHA1

>On Mon, 15 May 2000, James Wagner wrote:  
>

>> 1. Not one has heard of "Range Scale" associated with a map.

Funny. Every map I ever looked at had one. They are usually called scales, since calling it a range scale is a bit redundant.. (x feet per inch or some such)

- - -

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iQA/AwUBOSCujoF1GDz1l6VWEQKqBgCgyQ7Do3DvLSTER2swkJGP0GwxRqMAn09T  
9+9771o9k3W0QumqBGix/nIW  
=LakR

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## 79. [aprsspec] Bearing and Range

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 15 May 2000 22:41:40 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84194-2000.05.16-00.43.41--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob and everyone.

I had hoped to let this lay, but I think I see some common ground here.

In my terms, Bob seems to be describing Range from some location. The hang-up is that the location has nothing to do with the CENTER of the map/view.

So long as you have some method for readily determing the coordinates of some reference point (say, just for example, mouse-clicking with a cursor at the point in question) and some ready method for determining the distance from there to some other point (say, by dragging your cursor between the two, just for example), then you would appear to satisfy Bob's requirment.

If this is correct, the whole idea of "range" has nothing to do with the distance from the center of the map to its nearest edge. Or the extent of the map view. Or the scale of the map. Or any of these other things. It is simply the distance from the reference point and some other point in question.

Cheers,

Jim Wagner  
Oregon Research Electronics

-----  
[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)                      Tangent, Oregon 97389  
[KA7EHK@KC7KFE.OR.USA.NOAM](mailto:KA7EHK@KC7KFE.OR.USA.NOAM)              near Corvallis OR, home of  
[ka7ehk@yahoo.com](mailto:ka7ehk@yahoo.com)                      Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 80. [aprsspec] Re: Bearing and Range

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Tue, 16 May 2000 07:17:58 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84196-2000.05.16-01.19.49--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-84194-2000.05.16-00.43.41--Ian.Wade#care4free.net@lists.tapr.org>, Jim Wagner <wagnerj@proaxis.com> writes  
>Bob and everyone.  
>  
>I had hoped to let this lay, but I think I see some common ground here.  
>  
>In my terms, Bob seems to be describing Range from some location. The  
>hang-up is that the location has nothing to do with the CENTER of the  
>map/view.

No. Bob seems to be describing it now as the center of his "map view" (i.e. the center of what he sees in his display window), not the center of a piece of ground. Others could care less about what Bob can see on his screen -- they just want to know what on-the-ground geographical area he is referring to. That's why "map view" is meaningless.

>  
>So long as you have some method for readily determining the coordinates of  
>some reference point (say, just for example, mouse-clicking with a cursor  
>at the point in question) and some ready method for determining the  
>distance from there to some other point (say, by dragging your cursor  
>between the two, just for example), then you would appear to satisfy Bob's  
>requirement.  
>  
>If this is correct, the whole idea of "range" has nothing to do with the  
>distance from the center of the map to its nearest edge. Or the extent of  
>the map view. Or the scale of the map. Or any of these other things. It is  
>simply the distance from the reference point and some other point in  
>question.

Exactly. The reference point is a point on the ground. It is not a point on the display. It is not a point on the "map view".

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

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+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
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## 81. [aprsspec] Range

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Mon, 15 May 2000 23:18:14 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84198-2000.05.16-01.20.54--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob and everyone.

I had hoped to let this lay, but I think I see some common ground here.

In my terms, Bob seems to be describing Range from some location. The hang-up is that the location (as he described it in his examples) has nothing to do with the CENTER of the map/view.

It seems to me that Bob's requirement would be satisfied if:

(1) There some method for readily determining the coordinates of some reference point. Just for example, it might be mouse-clicking with a cursor at the point in question.

(2) There is some ready method for determining the distance from there to some other point. For example, it might be as simple as dragging the cursor between the reference point and some other point in question. Or it might be clicking a "distance" button, then clicking a point in the view with the software determining the distance from the clicked point to the reference point.

If this is correct, the whole idea of "range" has nothing to do with the distance from the center of the map to its nearest edge. Or the extent of the map view. Or the scale of the map. Or any of these other things. It is simply the distance from the reference point and some other point in question.

Could it be that we have been discussing entirely different things without recognizing it?

Cheers,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
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ka7ehk@yahoo.com                      Oregon State University  
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A computer without Windows is like a cake without mustard. - anonymous

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## 82. [aprsspec] Re: Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 16 May 2000 10:07:49 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-84237-2000.05.16-09.10.20--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 15 May 2000, Jim Wagner wrote:

> In my terms, Bob seems to be describing Range from some location. The  
> hang-up is that the location (as he described it in his examples) has  
> nothing to do with the CENTER of the map/view.

No, it has EVERYTHING to do with the CENTER of the MAP VIEW of the person who is referring to it... That is its definition... Ian's attempt to tie that location to a piece of ground in a "reference area" lead us all off on a tangent... and everyone else seems to still be thinking along those lines... I have returned to the original concept of simply a METRIC for describing the LOCATION and EXTENT of a view. ANY view.

> If this is correct, the whole idea of "range" has nothing to do with the  
> distance from the center of the map to its nearest edge. Or the extent of  
> the map view. Or the scale of the map. Or any of these other things. It is  
> simply the distance from the reference point and some other point in  
> question.  
>  
> Could it be that we have been discussing entirely different things without  
> recognizing it?

Yes, and we still are. Please understand I am talking about only the METRIC to be used to describe the "location and extent" of MY "current" MAP VIEW. "MY" in this case is WHOEVER wants to "describe" his own view to someone else...

In this context. The CENTER of that "view" describes the "location" of the view and the "RANGE SCALE" describes the "extent" of that view.

NOTHING MORE. I have seen only the following other alternatives as a

METRIC for anyone to use to describe their "current" view.

- 1) CENTER and RANGE (can have N/S and E/W components if needed)
- 2) LAT/LONG of all four corners

This discussion should have proved to EVERYONE the importance of having a common method of describing views. If we cannot understand what the other of us is saying about a view, then how can we possibly expect the users to make sense across all platforms and views and scales and in the heat of operations.

It appears that each author is still thinking that everyone is using ONLY their software. Then in MOST cases there is consistency. But PLEASE try to put yourself in the USERS shoes who is trying to visualize what Someone else using someone elses software is looking at. Close your eyes. What is the simplest way to do that?

I maintain that referring to the CENTER and RANGE of the view is the simplest and most concise way...

Bob

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### 83. [aprsspec] Re: Range

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Tue, 16 May 2000 09:54:53 -0500 (CDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-84244-2000.05.16-09.56.53--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Date: Mon, 15 May 2000 23:18:14 -0700  
> To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
> From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
> Subject: [aprsspec] Range  
> [...]  
> (1) There some method for readily determing the coordinates of some  
> reference point. Just for example, it might be mouse-clicking with a cursor  
> at the point in question.  
>  
> (2) There is some ready method for determining the distance from there to  
> some other point. For example, it might be as simple as dragging the cursor  
> between the reference point and some other point in question. Or it might  
> be clicking a "distance" button, then clicking a point in the view with the  
> software determining the distance from the clicked point to the reference  
> point.  
> [...]

These sound like really useful, intuitive GUI features, (although you should provide provide heading as well as distance).

I will admit that, even on re-reading the "Range" discussions, much of it doesn't make a whole lot of sense, particularly compared to Jim's suggested solution above.

-tjs

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### 84. [aprsspec] Re: Range

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Tue, 16 May 2000 11:49:55 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-84276-2000.05.16-11.53.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

All this discussion reminds me of the manual inputs days of the Air Defense Command. Your PPI had a center, and you could click a range switch, or offset the center of the sweep. This was all replaced by vector displays (and then raster) that show a map that covers the most area with the least distortion. You can roll your track-ball and the cursor can be used to "hook" any point, press the offset button to center, and then zoom in or out in binary

(2x, 4x, 8x, 16x, 32x). You basically roll/offset to pan the view. I still think this is pretty much an obsolete model (1930's).

I like the UI-View method. You don't have to worry about zooming in and out. You make a map of the area you want (special event, static, etc) and that's what you see. I think it is the logical modernization of the PPI scope model.

One of the interesting things you see about a scope operator, is they tend to use the same scale out of habit. The people who actually look around for unknown targets, usually have a large scale and then offset and zoom to the area where they see something. This is the same as offsetting and selecting a new map with higher resolution.

But say they put a track on the object. The computer then transmits the track block to others based on its lat/lon. It has no concept of center, scale, or range. The distant receiver of the track block can display it any way they like; indeed, they do.

Steve/k5okc

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## 85. [aprsspec] Re: Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 16 May 2000 13:24:17 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84283-2000.05.16-12.28.40--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84283-2000.05.16-12.28.40--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

To try to show you exactly what I really want to see on ALL APRS views as a common frame of reference for ALL users of ALL software is the following.... Please use a FIXED FONT to see this:

- 1) Somewhere on the VIEW, display a LEGEND that extends from the CENTER OUTWARD with a length equal to the largest integer power of 2 that will fit. The RANGE SCALE is the length of that LEGEND.
- 2) Somewhere on the VIEW, display the LAT/LON of the center & that RANGE.

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+-----+
|RNG 32 |
|LAT YY |
|LON XX |
| |
| + |
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| |
| |
| |<--- 32 mi --->|
+-----+
```

Notice that you can zoom to ANY size , ANY shape, but as long as we all display the largest integer power of 2 RANGE that will fit on each view then we all have a basis for common communications. I am Perfectly OK with Jim's long maps too. In this case he would display:

```
+-----+
|RNG 64 |
|LAT |
|LON |
| + |
| |<----- 64 mi ----->|
+-----+
```

His user would say he is "on a 64 mile range scale" from X. The user has a clear frame of reference as to what is within range of this view even if it is squished.

Further, I dont care whether you put the RANGE SCALE LEGEND in any of the other 8 orientations, or horizontal or vertical, as long as ONE END is referenced to the center... The KEY is that the view is more-or-less



quantified by only TWO parameters, CENTER and RANGE SCALE.

What I do \*not\* want to see is this:



How do I describe this to anyone???

Where on the planet are we? What is the center?

Its hard for me to instantly grasp about how wide this view is.

Will something reported as 60 miles away from me be on this map?

It is just not clear for use in a network of dissimilar users all with different views and all needing to communicate rapidly and concisely.

Hope this helps..

Bob

P.S. It DOES NOT HAVE TO BE MILES. It can be Statute miles, Nautical miles, or Kilometers. But whatever it is, it should be the largest integer power of 2 that will fit. It doesnt even have to be integer powers of two. Though I prefer that as a simple descriptor of magnitude. If your range scale is 50 miles. I have no problem with that. Just display a LEGEND that is 50 miles long.

---

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---

## 86. [aprsspec] Re: More about Center and Range

From: Cap Pennell <[cap@cruzio.com](mailto:cap@cruzio.com)>  
Date: Tue, 16 May 2000 20:46:18 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84373-2000.05.16-22.48.27--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84373-2000.05.16-22.48.27--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I hope it might help to have a specific example to discuss. How about a view centered at 3853.83N/07702.30W with a Range Scale of 1 Nautical Mile. Do you see the Lincoln Memorial? Do you see the Washington Monument? I'd describe this view with Jim's 4 corner points too if I could figure out just how to do that. Maybe Jim will provide them for discussion purposes. Just thought an example might help.

73, Cap KE6AFE

--

Cap Pennell  
Santa Cruz, CA 95062-1002 3658.93N/12200.91W [CM86xx]  
email: [cap@cruzio.com](mailto:cap@cruzio.com) home page: <http://members.cruzio.com/~cap>  
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

---

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---

## 87. [aprsspec] Re: More about Center and Range

From: "Steve Sampson" <[ssampson@usa-site.net](mailto:ssampson@usa-site.net)>  
Date: Wed, 17 May 2000 00:28:22 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84409-2000.05.17-00.31.13--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84409-2000.05.17-00.31.13--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Here's what I see:

<http://www.usa-site.net/~ssampson/sample.gif>

(GIF is 50k)

I see both, but I can't see Kennedy Center, or

Chinatown Arch.

----- Original Message -----

> I hope it might help to have a specific example to discuss. How about a  
> view centered at 3853.83N/07702.30W with a Range Scale of 1 Nautical Mile.  
> Do you see the Lincoln Memorial? Do you see the Washington Monument?

---

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---

## 88. [aprsspec] Re: [aprssig] Re: Unhandled Exception Error

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Tue, 16 May 2000 23:06:53 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84419-2000.05.17-01.09.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

More differences between APRServe and APRSd. APRServe echos all packets, even those sent to it by your local station. APRSd does not! I send it a packet, it is not ever echoed back by APRSd. Everything else still works, I can send message to other stations, I can be seen, RF gating appears to work, but I can not see my own packets, or any packets my station might send to APRSd. It is like transmitting on RF, and knowing you are getting out, but never seeing a digipeated packet.

3rd party messages. One of the fundamental designs of the third party packet and APRServe was that APRServe would ignore them. That has changed with APRSd. I have modified the current version of APRS+SA to remove them. Yes, that is simple. I just wanted you to be aware, APRSd is not equal to APRServe.

www.aprs.net == APRSd  
second.aprs.net == APRServe.

Brent KH2Z

----- Original Message -----

From: Steve Dimse K4HG <k4hg@aprs.net>  
To: Brent Hildebrand <bhildebrand@earthlink.net>  
Sent: Wednesday, May 10, 2000 11:38 PM  
Subject: Re: [aprssig] Re: Unhandled Exception Error

> On 5/11/00 2:17 AM Brent Hildebrand (bhildebrand@earthlink.net) wrote:  
>  
> >If APRSd is not removing 3rd party packets, then this is a fundamental  
> >change in the APRServe philosophy. Remember when this all got started?  
> >Programs could send everything heard to APRServe.  
>  
> When we came up with the idea about using the third-party packets, we  
> said the IGates block them. I added the filter to APRServe as a backup.  
> It was not meant as the primary defense.  
>  
> >APRServe had the smarts  
> >on 3rd party packets. What I saw on www.aprs.net was more then just 3rd  
> >party packets, which were there. APRSd does not equal APRServe  
> >apparently. Unfortunately.  
> >  
> Reading between the lines, are you saying that APRS+SA is sending them?  
> If so, it should not be hard for you to fix this right? It would be easy  
> to add to aprsd if I understood the code, but every time I've looked at  
> it to try to fix something I have gotten a terrible headache and given up.  
>  
> Steve K4HG  
>

---

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---

## 89. [aprsspec] Range and Center: My Final Answer

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Tue, 16 May 2000 23:18:12 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84425-2000.05.17-01.20.20--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Hello everyone -

This has gone on far too long. We seem to have gone around several times and I am confused.

I will implement Center and Range indication in my maps in any way that the spec gets written. But, I will also provide other tools which (hopefully) provide even better information.

Cheers,  
Jim, KA7EHK

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.U.S.A.NOAM   near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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## 90. [aprsspec] Re: [aprssig] Re: Unhandled Exception Error

From: Jeff King <[jeff@aerodata.net](mailto:jeff@aerodata.net)>  
Date: Wed, 17 May 2000 02:27:04 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-84426-2000.05.17-01.27.25--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Brent Hildebrand wrote:

> More differences between APRServe and APRSd. APRServe echos all packets, even those sent to it by your local station. APRSd does not! I send it a packet, it is not ever echoed back by APRSd. Everything else still works, I can send message to other stations, I can be seen, RF gating appears to work, but I can not see my own packets, or any packets my station might send to APRSd. It is like transmitting on RF, and knowing you are getting out, but never seeing a digipeated packet.

A more proper analogy is its like connected mode RF as the underlying TCP layer is handling retries/confirmation of receipt.

-Jeff wb8wka

---

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## 91. [aprsspec] Re: Range and Center: My Final Answer

From: Ian Wade <[Ian.Wade@care4free.net](mailto:Ian.Wade@care4free.net)>  
Date: Wed, 17 May 2000 08:13:26 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-84429-2000.05.17-02.15.21--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-84425-2000.05.17-01.20.20--Ian.Wade#care4free.net@lists.tapr.org>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes  
>

>I will implement Center and Range indication in my maps in any way that the  
>spec gets written. But, I will also provide other tools which (hopefully)  
>provide even better information.

There may be a few words in the spec on the \*philosophy\* of Center and Range, but there will be nothing about its \*implementation\*.

Within the scope of APRS Protocol Version 1.0, implementation of Center and Range is a display/operational issue, not an on-air issue. So the way is wide open for you to develop those tools.

BTW, you can add my name to your list of people who have come across "Range Scale" -- at one time I was in radar system design (but that was 35 years ago, in the last century .... <grin>).

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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## 92. [aprsspec] Re: Range and Center: My Final Answer

From: Bob Bruninga <bruninga@nadn.navy.mil>

Date: Wed, 17 May 2000 10:34:49 -0400 (EDT)

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-84500-2000.05.17-09.36.54--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

On Wed, 17 May 2000, Ian Wade wrote:

> There may be a few words in the spec on the \*philosophy\* of Center and  
> Range, but there will be nothing about its \*implementation\*.  
> Within the scope of APRS Protocol Version 1.0, implementation of Center  
> and Range is a display/operational issue, not an on-air issue.

I disagree completely. Specifying a metric for MAP VIEWS is a STANDARDS issue of the 1st degree of importance. It must be in the spec.

By the way, ON further thought, I also dont even care if the RANGE SCALE LEGEND has one end on center. Just so long as SOMEWHERE on all views is the following information. I DONT EVEN CARE IF WE CALL IT "RANGE SCALE" But it MUST have the word "SCALE" in it.

LAT of center

LON of center

RANGE SCALE \*or\* SCALE

Where RANGE SCALE is simply defined as a LEGEND of length N mi|km|nm which is approximately the distance of the smaller of the half-width/or half-height. Thus even the following would be fine...

```
+-----+ So You can put it ANYWHERE, ANY oreintation
|RNG | ANY thing you want, AND it doesnt even have
|LAT | to be an integer power of 2. But the length
|LON + | is important to be about HALF screen.
| |
| |
| |<- 32 mi ->|
+-----+
```

Surely we can agree on this standard METRIC for defining !@#\$\$% SCALE! IF JIM's users have such a problem understanding "RANGE" then we can JUST CALL IT SCALE!!! I DONT CARE. But we MUST HAVE A STANDARD for describing the extent of a "VIEW" in APRS. CENTER and @#\$\$%! SCALE are the best way that I can think of.

Trying to do such a simple thing with a list of FOUR LAT/LONGS is ridiculous. How many people can tell you if I can see a station 30 miles away if I tell you that the corners of my view are

3859.13N 07629.11W

3845.22N 07629.11W

3845.22N 07619.32W

3859.11N 07619.32W

Very precise but practically useless to human operators.

Whereas "my view is on a 32 mile range around Glen Burnie" is MUCH more user friendly.

Bob

---

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---

### 93. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Wed, 17 May 2000 10:49:13 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84503-2000.05.17-09.51.19--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84503-2000.05.17-09.51.19--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Authors,

This one is short. please take time to read it. It REMOVES  
RANGE! Thanks. Here is another try at a suggested wording that would be  
acceptable to all authors:

REFERENCE FOR MAP VIEWS:

> APRS is a tactical geographical system, and users need to be able to  
> relate the size of a map view in a non-ambiguous way. Thus all map  
> displays should have a meaningful legend to convey the SIZE of the map  
> view to the users that is consistent across all applications.  
  
> Thus when communicating about such views, two parameters are  
> required: CENTER and SCALE.  
>  
> In this context, the SCALE of any map view is the approximate  
> range (in nautical miles, statute miles or km) of the largest circle  
> that will conveniently fit in that map view. This SCALE should  
> be presented to the user with a LEGEND of that length somewhere  
> on all views. This convention gives all software users a common  
> and concise basis for describing the approximate size of the  
> central region of all tactical map views across all platforms.

de WB4APR, Bob

---

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---

### 94. [aprsspec] Re: More about Center and Range

From: Stephen Schwarm <[sschwarm@emc.com](mailto:sschwarm@emc.com)>  
Date: Wed, 17 May 2000 11:10:11 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-84504-2000.05.17-10.12.11--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-84504-2000.05.17-10.12.11--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Bob,

I think I finally understand. I think the discussion so far has been  
mixing up two things. The Map View is what a user can see on his/her  
display at a point in time. That is what is defined below. And Area of  
Interest which the area that is involved in the activity being "managed"  
by APRS. It is up to the user what Map View they use so what you are  
trying to standarize is a common definition of the contents of a Map  
View so that two users talking to each other can agree that they at  
least have a common subset of the total APRS picture being displayed on  
their displays. Is this correct?

Steve, W3EVE

Bob Bruninga wrote:

>  
> Authors,  
>  
> This one is short. please take time to read it. It REMOVES  
> RANGE! Thanks. Here is another try at a suggested wording that would be  
> acceptable to all authors:

```

>
> REFERENCE FOR MAP VIEWS:
>
> > APRS is a tactical geographical system, and users need to be able to
> > relate the size of a map view in a non-ambiguous way. Thus all map
> > displays should have a meaningful legend to convey the SIZE of the map
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>
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> > required: CENTER and SCALE.
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> > be presented to the user with a LEGEND of that length somewhere
> > on all views. This convention gives all software users a common
> > and concise basis for describing the approximate size of the
> > central region of all tactical map views across all platforms.
>
> de WB4APR, Bob
>
> ---
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## 95. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>  
 Date: Wed, 17 May 2000 23:34:03 -0400 (EDT)  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-84592-2000.05.17-22.36.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

On Wed, 17 May 2000, Stephen Schwarm wrote:

```

> Bob,
> I think I finally understand....
> It is up to the user what Map View they use so what you are
> trying to standarize is a common definition of the contents of a Map
> View so that two users talking to each other can agree that they at
> least have a common subset of the total APRS picture being displayed on
> their displays. Is this correct?

```

Yes. But I would say the last sentence as... "can both have a scale of reference when they talk about the APRS picture being displayed on their displays..."

Bob

```

> Bob Bruninga wrote:
>
> > Authors,
> >
> > This one is short. please take time to read it. It REMOVES
> > RANGE! Thanks. Here is another try at a suggested wording that would be
> > acceptable to all authors:
> >
> > REFERENCE FOR MAP VIEWS:
> >
> > > APRS is a tactical geographical system, and users need to be able to
> > > relate the size of a map view in a non-ambiguous way. Thus all map
> > > displays should have a meaningful legend to convey the SIZE of the map
> > > view to the users that is consistent across all applications.
> >
> > > Thus when communicating about such views, two parameters are
> > > required: CENTER and SCALE.
> > >
> > > In this context, the SCALE of any map view is the approximate
> > > range (in nautical miles, statute miles or km) of the largest circle
> > > that will conveniently fit in that map view. This SCALE should
> > > be presented to the user with a LEGEND of that length somewhere
> > > on all views. This convention gives all software users a common
> > > and concise basis for describing the approximate size of the
> > > central region of all tactical map views across all platforms.
> >

```

> > de WB4APR, Bob  
> >  
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>  
> ---  
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>  
>

APRSDos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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## 96. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 18 May 2000 01:11:15 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84620-2000.05.18-00.13.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ian and the group,

In my last posting, I focused only on the fact that I want a common "SCALE" of reference, for all map views. I removed all references to range except that it is simply used to define the approximate size of this Scale. In this sense it does make sense to include the word as an adjective modifier. The below only has one word changed from my posting earlier today... It is my preferred wording.

On Wed, 17 May 2000, Bob Bruninga wrote:

> REFERENCE FOR MAP VIEWS:  
>  
> > APRS is a tactical geographical system, and users need to be able to  
> > relate the size of a map view in a non-ambiguous way. Thus all map  
> > displays should have a meaningful legend to convey the SIZE of the map  
> > view to the users that is consistent across all applications.  
>  
> > Thus when communicating about such views, two parameters are  
> > required: CENTER and SCALE.  
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> > In this context, the SCALE of any map view is the approximate  
> > range (in nautical miles, statute miles or km) of the largest circle  
> > that will conveniently fit in that map view. This RANGE SCALE should  
> > be presented to the user with a LEGEND of that length somewhere  
> > on all views. This convention gives all software users a common  
> > and concise basis for describing the approximate size of the  
> > central region of all tactical map views across all platforms.

This wording should be ambiguous enough for those authors and users who are confused by the term RANGE and they can just use SCALE. But those who do understand the concept of range, can use the term RANGE SCALE as a better descriptor of the "scale" that they are using.

Bob

---  
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---

## 97. [aprsspec] Re: More about Center and Range

From: Cap Pennell <cap@cruzio.com>  
Date: Wed, 17 May 2000 22:26:15 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-84624-2000.05.18-00.30.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At 10:28 PM 5/16/2000, Steve Sampson wrote:

>Here's what I see:

>

><http://www.usa-site.net/~ssampson/sample.gif>

>

>(GIF is 50k)

>

>I see both, but I can't see Kennedy Center, or

>Chinatown Arch.

>

>----- Original Message -----

>

> > I hope it might help to have a specific example to discuss. How about a  
> > view centered at 3853.83N/07702.30W with a Range Scale of 1 Nautical Mile.  
> > Do you see the Lincoln Memorial? Do you see the Washington Monument?

Nice sample.gif, Steve. I think our datums are different, and it shows at this Scale. On my Washington, D.C. map using the maplist.eas DOS map with APRSdosMAX846, I see the given Center as the White House building itself. I bet my map uses NAD27 and yours uses WGS84. Close though.  
73, Cap

--

Cap Pennell

Santa Cruz, CA 95062-1002 3658.93N/12200.91W [CM86xx]

email: cap@cruzio.com home page: <http://members.cruzio.com/~cap>

packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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## 98. [aprsspec] Re: More about Center and Range

From: Ian Wade <Ian.Wade@care4free.net>

Date: Thu, 18 May 2000 08:15:08 +0100

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-84629-2000.05.18-02.16.52--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

In article <LYR14779-84620-2000.05.18-00.13.18--Ian.Wade#care4free.net@lists.tapr.org>, Bob Bruninga <bruninga@nadn.navy.mil> writes

>It is my preferred wording.

>

>On Wed, 17 May 2000, Bob Bruninga wrote:

>

>> REFERENCE FOR MAP VIEWS:

>>

>> > APRS is a tactical geographical system, and users need to be able to  
>> > relate the size of a map view

What does "size of a map view" mean?

> in a non-ambiguous way. Thus all map

>> > displays should have a meaningful legend to convey the SIZE of the map

>> > view to the users that is consistent across all applications.

>>

>> > Thus when communicating about such views, two parameters are

>> > required: CENTER and SCALE.

>> >

>> > In this context, the SCALE of any map view is the approximate

>> > range (in nautical miles, statute miles or km) of the largest circle

What does "range ... of the largest circle" mean? How can a circle have a "range"? (It can have a \*radius\*, as I wrote originally).

>> > that will conveniently fit in that map view.

Why does the circle have to fit into anything on the screen?



> This RANGE SCALE should  
>> > be presented to the user with a LEGEND of that length somewhere  
>> > on all views. This convention gives all software users a common  
>> > and concise basis for describing the approximate size of the  
>> > central region of all tactical map views across all platforms.

>  
>This wording should be ambiguous enough  
  
You can say that again. It \*is\* ambiguous.

I'm sorry Bob, but this won't do. You are still introducing noise about "map views" which is of no interest to other users. Nobody is interested in what "view" you have of your map on your screen. Nobody is interested in whether that view fits your display window or not. Nobody is interested in what kind of bar representing distance/range you display in your window.

What people need to know is simply what \*geographical area\* you are referring to, which you \*can\* represent uniquely and unambiguously by center/range. That is all.

~~~~~  
With this information, people can then decide which map they need, how they want to display it, and what scale bar (if any) they want to have displayed somewhere in the window. The "view" on their screen may finish up looking exactly like yours, but it doesn't have to.

~~~~~  
This is where your definition falls down. By all means talk about a "map view" (provided you define the term, which you haven't), but don't relate it in any way to display geometry or display "views".

A few days ago, you presented a different form of words (just before you thought I'd tricked you with my fiendishly cunning logic :-)):

```
>> COMMUNICATING Geographical Areas of Common Interest
>> =====
>> APRS is a tactical geographical system. To maximize its operational
>> effectiveness, users need to have an unambiguous understanding of
>> geographical areas of common interest when communicating with each
>> other.
>>
>> In APRS, this is done by reference to a CENTER and RANGE. These
>> specify the geographical center and approximate radius of a circle that
>> covers the area of interest. The radius of the circle (in nautical
>> miles, statute miles or km) is known as the "range scale". This
>> convention gives all users a simple common basis for describing tactical
>> areas of interest, at whatever center/range scale is in use.
>>
>> For interoperability among all platforms and modes of communications, it
>> is expected that APRS user software will provide easy-to-use tools for
>> defining and viewing these areas of tactical interest.
>> ~~~~~
>
```

I said I would plug this into the spec, because I believe it covers all the points you've mentioned. It \*is\* ambiguous enough to allow different methods of specifying a geographical area of interest, \*without\* being needlessly prescriptive on how people relate it to their display views.

~~~~~  
I still say that this earlier definition of yours is the best so far, in the context of the "APRS Design Philosophy" chapter in the spec.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification  
\*\*\*\*\* Third draft now available \*\*\*\*\*  
--  
+-----+  
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |  
| email: g3nrw@arrl.net |  
| |  
| APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/Faprswg.html> |  
| APRS DECODER: <http://www.netro.co.uk/aprs.htm> |  
+-----+

---

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## 99. [aprsspec] Re: Range and Center: My Final Answer

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Thu, 18 May 2000 10:12:47 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84634-2000.05.18-04.16.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <Pine.GS0.4.05L.10005170949380.620-100000@arctic>, Bob Bruninga  
<bruninga@nadn.navy.mil> writes

>By the way, ON further thought, I also dont even care if the RANGE SCALE  
>LEGEND has one end on center. Just so long as SOMEWHERE on all  
>views is the following information. I DONT EVEN CARE IF WE CALL IT "RANGE  
>SCALE" But it MUST have the word "SCALE" in it.

No. The "scale" relates to how big something is displayed in a window.

The "range" relates to how big something is on the ground.

>  
>Where RANGE SCALE is simply defined as a LEGEND of length N mi|km|nm  
>which is approximately the distance of the smaller of the  
>half-width/or half-height. Thus even the following would be fine...  
>  
>+-----+ So You can put it ANYWHERE, ANY oreintation  
>|RNG | ANY thing you want, AND it doesnt even have  
>|LAT | to be an integer power of 2. But the length  
>|LON + | is important to be about HALF screen.  
>| |  
>| |  
>| |<- 32 mi ->|  
>+-----+  
>

Why should the range scale be related in any way to the screen geometry  
(i.e. half-height/half-width)?

The following 2 pictures show the "view" to exactly the same \*range\* as your  
picture, but to a different "scale".

```
+-----+
|RNG | ZOOM IN
|LAT |
|LON + |
| |
| |
| |<-----32mi----->| |
+-----+
```

```
+-----+
|RNG | ZOOM OUT
|LAT |
|LON + |
| |
| |
| |<32mi>| |
+-----+
```

This last picture could also be viewed like this:

```
+-----+
|RNG | ZOOM OUT, PAN LEFT
|LAT |
|LON + |
| |
| |
| |<32mi>| |
+-----+
```

(i.e. the geographical center is not at the screen center.

In other words, all of the 4 above screen "views" are *different*, but they all represent exactly the *same* geographical area of interest, using the *same* range.

Thus it does not make any sense to talk about your screen "view". You need to talk about the *geographical area*, on the ground.

>  
>Whereas "my view is on a 32 mile range around Glen Burnie" is MUCH more  
>user friendly.

No problem at all with that, because you didn't use the word "scale", and you didn't specify how much of that view occupied your display -- your use of the word "view" here does not relate to screen scale or screen geometry.

I repeat: "view" and "scale" are screen/display/window artefacts, associated with zoom and pan actions, and are irrelevant to this discussion.

"Center" (=Glen Burnie) and "range" (=32 miles) relate to a geographical area, and are directly relevant to this discussion. But anyone using that information is free to "view" it and "scale" it any way they want -- this is not for the specification to decree.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

\*\*\*\*\* Third draft now available \*\*\*\*\*

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html|
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

---

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---

## 100. [aprsspec] Re: More about Center and Range

From: Roger Barker <roger@peaksys.co.uk>  
Date: Thu, 18 May 2000 11:23:44 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84635-2000.05.18-05.26.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-84503-2000.05.17-09.51.19--roger#peaksys.co.uk@lists.tapr.org>, Bob Bruninga <bruninga@nadn.navy.mil> writes

>Authors,

>

> This one is short. please take time to read it. It REMOVES

>RANGE! Thanks. Here is another try at a suggested wording that would be

>acceptable to all authors:

>

>

>REFERENCE FOR MAP VIEWS:

>

>> APRS is a tactical geographical system, and users need to be able to  
>> relate the size of a map view in a non-ambiguous way. Thus all map  
>> displays should have a meaningful legend to convey the SIZE of the map  
>> view to the users that is consistent across all applications.

>

>> Thus when communicating about such views, two parameters are  
>> required: CENTER and SCALE.

>>

>> In this context, the SCALE of any map view is the approximate  
>> range (in nautical miles, statute miles or km) of the largest circle  
>> that will conveniently fit in that map view. This SCALE should  
>> be presented to the user with a LEGEND of that length somewhere  
>> on all views. This convention gives all software users a common  
>> and concise basis for describing the approximate size of the  
>> central region of all tactical map views across all platforms.

I wasn't going to join in this discussion, but...

I don't like this new version for two reasons (I'm assuming that where you have put "range" of a circle you meant to put "radius".)

1. There are common usages of the term SCALE when referring to a map that are different to your definition. E.g. "this map has a SCALE of 1:250,000", or "this map has a SCALE of one inch to five miles". I think this proposed usage of the term SCALE will confuse users.

2. I don't like the insistence on the scale legend. On unprojected maps drawn on a rectangular lat/long grid, as commonly used by APRS software, such a scale is always inaccurate, and it becomes increasingly inaccurate as the area covered by the map increases, to the point where it contains no useful information. I don't think a requirement to show such a line should be part of the spec.

So I think SCALE should be RANGE or RANGE SCALE, but not just SCALE on its own, and the requirement for the scale legend should be removed.

That leaves a simple requirement for something like:-

Map centre - 5258.24N, 00002.77W  
Map range (or range scale) - 50 miles

(RANGE or RANGE SCALE defined as you have defined SCALE.)

--

Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

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## 101. [aprsspec] Re: More about Center and Range

From: Roger Barker <roger@peaksys.co.uk>  
Date: Thu, 18 May 2000 11:39:05 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84637-2000.05.18-05.47.14--lyris.aprsspec#tapr.org@lists.tapr.org>  
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In article <LYR13460-84635-2000.05.18-05.26.18--roger#peaksys.co.uk@lists.tapr.org>, Roger Barker <roger@peaksys.co.uk> writes  
[snip]

>Map centre - 5258.24N, 00002.77W  
>Map range (or range scale) - 50 miles

Or rather:-  
View centre - 5258.24N, 00002.77W  
View range (or range scale) - 50 miles

--

Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
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## 102. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 18 May 2000 08:20:12 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84643-2000.05.18-07.22.24--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 18 May 2000, Ian Wade wrote:

> > > APRS is a tactical geographical system, and users need to be able to  
> > > relate the size of a map view  
>  
> What does "size of a map view" mean?

I just dont know how to make it any clearer. All of these words are in the english dictionary.

> > in a non-ambiguous way. Thus all map

> > > displays should have a meaningful legend to convey the SIZE of the map  
> > > view to the users that is consistent across all applications.  
> > >  
> > > Thus when communicating about such views, two parameters are  
> > > required: CENTER and SCALE.  
> > >  
> > > In this context, the SCALE of any map view is the approximate  
> > > range (in nautical miles, statute miles or km) of the largest circle  
>  
> What does "range ... of the largest circle" mean? How can a circle have  
> a "range"? (It can have a \*radius\*, as I wrote originally).

The RANGE of a circle is equivalent to its radius.

> > > that will conveniently fit in that map view.  
>  
> Why does the circle have to fit into anything on the screen?

Because that is the metric for deciding what is the appropriate SCALE for that map view.

> > This RANGE SCALE should  
> > > be presented to the user with a LEGEND of that length somewhere  
> > > on all views. This convention gives all software users a common  
> > > and concise basis for describing the approximate size of the  
> > > central region of all tactical map views across all platforms.  
>  
> >  
> > This wording should be ambiguous enough  
>  
> You can say that again. It \*is\* ambiguous.  
>  
>  
> I'm sorry Bob, but this won't do. You are still introducing noise about  
> "map views" which is of no interest to other users. Nobody is interested  
> in what "view" you have of your map on your screen. Nobody is interested  
> in whether that view fits your display window or not. Nobody is  
> interested in what kind of bar representing distance/range you display  
> in your window.

No one may care, but when they DO, then I NEED A METRIC TO DESCRIBE IT TO THEM!

> What people need to know is simply what \*geographical area\* you are  
> referring to, which you \*can\* represent uniquely and unambiguously by  
> center/range. That is all.

~~~~~

NO!!!!!! I am NOT describing a geographical AREA!!!!!! I am describing  
WHAT I SEE ON MY SCREEN!!!!!! This is so that I can CONVEY that to another  
user. \*\*\*\* BIG DIFFERENCE!!!!

> With this information, people can then decide which map they need, how  
> they want to display it, and what scale bar (if any) they want to have  
> displayed somewhere in the window. The "view" on their screen may finish  
> up looking exactly like yours, but it doesn't have to.  
> ~~~~~

ABSOLUTELY. They can LOOK AT ANYTHING THEY WANT. I am using CENTER AND  
SCALE AS A METRIC TO DESCRIBE WAHT \*\*\*\* I \*\*\*\* Am LOOKING AT. FORGET YOUR  
CONCEPT OF A FIXED GEOGRAPHICAL PIECE OF GROUND. THAT IS NOT WHAT I AM  
TALKING ABOUT.

> This is where your definition falls down. By all means talk about a "map  
> view" (provided you define the term, which you haven't), but don't  
> relate it in any way to display geometry or display "views".

I have too. Sorry you just dont understand it.

> A few days ago, you presented a different form of words (just before you  
> thought I'd tricked you with my fiendishly cunning logic :-)):  
>  
> > COMMUNICATING Geographical Areas of Common Interest  
> > =====  
> > APRS is a tactical geographical system. To maximize its operational  
> > effectiveness, users need to have an unambiguous understanding of  
> > geographical areas of common interest when communicating with each  
> > other.  
> >

```

> > In APRS, this is done by reference to a CENTER and RANGE. These
> > specify the geographical center and approximate radius of a circle that
> > covers the area of interest. The radius of the circle (in nautical
> > miles, statute miles or km) is known as the "range scale". This
> > convention gives all users a simple common basis for describing tactical
> > areas of interest, at whatever center/range scale is in use.
> >
> > For interoperability among all platforms and modes of communications, it
> > is expected that APRS user software will provide easy-to-use tools for
> > defining and viewing these areas of tactical interest.
> > ~~~~~
>
> I said I would plug this into the spec, because I believe it covers all
> the points you've mentioned. It *is* ambiguous enough to allow different
> methods of specifying a geographical area of interest, *without* being
> needlessly prescriptive on how people relate it to their display views.
> ~~~~~
> I still say that this earlier definition of yours is the best so far,
> in the context of the "APRS Design Philosophy" chapter in the spec.
> ~~~~~

```

I disagree. It is ambiguous, refers to geography and not map views, and does not convey the sense of importance of having a common standard mMETRIC for describing map views.

Im GONE TO DAYTON. NO MORE COMMENTS TILL NEXT WEEK.

de WB4APR  
Bob

---  
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### 103. [aprsspec] Re: Range and Center: My Final Answer

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 18 May 2000 08:36:49 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84645-2000.05.18-07.38.58--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 18 May 2000, Ian Wade wrote:

```

> In article <Pine.GS0.4.05L.10005170949380.620-100000@arctic>, Bob Bruninga
> <bruninga@nadn.navy.mil> writes
>
> >By the way, ON further thought, I also dont even care if the RANGE SCALE
> >LEGEND has one end on center. Just so long as SOMEWHERE on all
> >views is the following information. I DONT EVEN CARE IF WE CALL IT "RANGE
> >SCALE" But it MUST have the word "SCALE" in it.
>
> No. The "scale" relates to how big something is displayed in a window.
> The "range" relates to how big something is on the ground.

```

NO, WRONG, INCORRECT. It is the radius of the largest circle that will fit on a screen.

```

> >Where RANGE SCALE is simply defined as a LEGEND of length N mi|km|nm
> >which is approximately the distance of the smaller of the
> >half-width/or half-height. Thus even the following would be fine...
> >
> >+-----+ So You can put it ANYWHERE, ANY oreintation
> >|RNG | | ANY thing you want, AND it doesnt even have
> >|LAT | | to be an integer power of 2. But the length
> >|LON + | | is important to be about HALF screen.
> >| | |
> >| | |
> >| | |
> >| | |
> >| | |
> >+-----+
>
> Why should the range scale be related in any way to the screen geometry
> (i.e. half-height/half-width)?

```

So that it is consistent with everyone else. What we are after here is CONSISTENCY. A METRIC that will be the same for everyone.

> The following 2 pictures show the "view" to exactly the same \*range\* as your  
 > picture, but to a different "scale".

```
> +-----+
> |RNG | ZOOM IN
> |LAT |
> |LON + |
> | |
> | |
> | |<-----32mi----->|
> +-----+
```

YES, BUT THEN THIS PLOT WILL NOT CONTAIN EVERYTHING WITHIN A 32 MILE RANGE  
 OF THE CENTER OF THE SCREEN! IF I SAY THAT SOMETHING IS WITHIN 30 MILES  
 AND I AM ON THE 32 MILE RANGE SCALE, then BY GOSH IT OUTTA BE ON THE DAMN  
 SCREEN! \*\*\* THIS IS EXACTLY THE LUNACY WE ARE TRYING TO AVOID!!!!  
 This example shows EXACTLY WHY it is HALF-WIDTH or HALF-HEIGHT to define  
 the RANGE SCALE!

```
> +-----+
> |RNG | ZOOM OUT
> |LAT |
> |LON + |
> | |
> | |
> | |<32mi>|
> +-----+
```

I would say that this screen might compute to a range scale of 64 miles.

> This last picture could also be viewed like this:

```
> +-----+
> |RNG | ZOOM OUT, PAN LEFT
> |LAT |
> |LON + |
> | |
> | |
> | |<32mi>|
> +-----+
```

NO IT CANNOT. AS SOON AS YOU MOVE THE SCREEN OR ZOOM, THEN IT HAS A NEW  
 CENTER AND RANGE. YOU ARE STILL CONFUSING THIS AS A \*\*\* METRIC \*\*\* TO  
 DESCRIBE EACH AND EVERY VIEW IN UNAMBIGUOUS CONSISTENT TERMS.

I SAY AGAIN! READ MY LIPS! CENTER AND RANGE DESCRIBE ONLY YOUR PRESENT  
 VIEW! REPEAT THAT BACK TO ME SLOWLY... THINK ABOUT WHAT IT MEANS!  
 IT IS ONLY A METRIC FOR DESCRIBING YOUR PRESENT VIEW IN A CONSISTENT  
 MANNER, DEFINED IN THE APRS STANDARD.

> (i.e. the geographical center is not at the screen center.

Then it is NOT THE CENTER OF THIS VIEW!

> In other words, all of the 4 above screen "views" are \*different\*, but they  
 > all represent exactly the \*same\* geographical area of interest, using the  
 > \*same\* range.

FORGET GEOGRAPHICAL AREA OF INTEREST. I HAVE BEEN TELLING YOU THAT THAT  
 CONCEPT IS ALL WRONG NOW FOR 3 DAYS. IT IS THE METRIC for describing YOUR  
 CURRENT VIEW so that you can RELATE IT TO SOMEONE ELSE IN A CONSISTENT  
 MANNER!

> Thus it does not make any sense to talk about your screen "view". You need  
 > to talk about the \*geographical area\*, on the ground.

THAT HAS NOTHING TO DO WITH CENTER AND RANGE AS A METRIC TO DESCRIBE A  
 SCREEN VIEW. If you want to define something to do with geography, that  
 is a different subject and totally meaningless in this section..

> >Whereas "my view is on a 32 mile range around Glen Burnie" is MUCH more  
 > >user friendly.  
 >  
 > No problem at all with that, because you didn't use the word "scale", and  
 > you didn't specify how much of that view occupied your display -- your use  
 > of the word "view" here does not relate to screen scale or screen geometry.

I certainly did to anyone that understands ENGLISH. My screen contains  
 \*\*\*\* AT LEAST \*\*\*\* a central area that is 32 miles in range from the

center of Glen Burnie. No one on the planet that understands English can missinterpret that.

> I repeat: "view" and "scale" are screen/display/window artefacts, associated  
> with zoom and pan actions, and are irrelevant to this discussion.

Then you DO NOT UNDERSTAND THE PRESENT DISCUSSION!

> "Center" (=Glen Burnie) and "range" (=32 miles) relate to a geographical  
> area, and are directly relevant to this discussion. But anyone using that  
> information is free to "view" it and "scale" it any way they want -- this is  
> not for the specification to decree.

They may USE MY INFORMATION in any way they see fit! But when I am  
looking at a view, I MUST HAVE A METRIC that is \*\*\* CONSISTENT \*\*\* with  
everyone else in APRS to describe it in simplest and concise terms.

de WB4APR

---

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---

## 104. [aprsspec] Re: Range and Center: My Final Answer

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 18 May 2000 08:42:19 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-84646-2000.05.18-07.44.32--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Since Ian is so confused about VIEWS and GEOGRAPHY, lets try this  
explanation.

Lets let everyone in all flavors of APRS, dos, Win,Mac,Uiview, APRS+SA  
whatever display a VIEW that covers EXACTLY the same area. That is  
everyone's screen displays everything within a 32 mile range of Glen  
Burnie.

What I want out of this is that when EVERYONE of those users, is ASKED to  
describe the area he is looking at no matter what software he is using.  
His SIMPLE, CONCISE description done in accordance with the Standards  
laid out in the SPEC will all "sound about the Same".

If they DON'T sound the same then we do NOT HAVE A COMMUNICATIONS STANDARD  
and are only undermining interoperability between all users.

de WB4APR, GONE TO DAYTON... Now an HOUR LATE!

---

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## 105. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 18 May 2000 08:46:09 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-84647-2000.05.18-07.48.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Thanks Roger. I didnt like simplyfing it to just SCALE exactly for the  
reasons you mention. I agree too that as long as you display a RANGE  
SCALE NUMBER, you dont have to have the LEGEND. That was only to put it  
into a context that the people who dont like RANGE circles could in fact  
use a LINEAR legend and then NOT have to have a RANGE SCALE field along  
with the LAT/LON...

I think we are in agreement.

Bob

On Thu, 18 May 2000, Roger Barker wrote:

> >REFERENCE FOR MAP VIEWS:



```

> >
> > APRS is a tactical geographical system, and users need to be able to
> > relate the size of a map view in a non-ambiguous way. Thus all map
> > displays should have a meaningful legend to convey the SIZE of the map
> > view to the users that is consistent across all applications.
> >
> > Thus when communicating about such views, two parameters are
> > required: CENTER and SCALE.
> >
> > In this context, the SCALE of any map view is the approximate
> > range (in nautical miles, statute miles or km) of the largest circle
> > that will conveniently fit in that map view. This SCALE should
> > be presented to the user with a LEGEND of that length somewhere
> > on all views. This convention gives all software users a common
> > and concise basis for describing the approximate size of the
> > central region of all tactical map views across all platforms.
>
> I wasn't going to join in this discussion, but...
>
> I don't like this new version for two reasons (I'm assuming that where
> you have put "range" of a circle you meant to put "radius".)
>
> 1. There are common usages of the term SCALE when referring to a map
> that are different to your definition. E.g. "this map has a SCALE of
> 1:250,000", or "this map has a SCALE of one inch to five miles". I think
> this proposed usage of the term SCALE will confuse users.
>
> 2. I don't like the insistence on the scale legend. On unprojected maps
> drawn on a rectangular lat/long grid, as commonly used by APRS software,
> such a scale is always inaccurate, and it becomes increasingly
> inaccurate as the area covered by the map increases, to the point where
> it contains no useful information. I don't think a requirement to show
> such a line should be part of the spec.
>
> So I think SCALE should be RANGE or RANGE SCALE, but not just SCALE on
> its own, and the requirement for the scale legend should be removed.
>
> That leaves a simple requirement for something like:-
>
> Map centre - 5258.24N, 00002.77W
> Map range (or range scale) - 50 miles
>
> (RANGE or RANGE SCALE defined as you have defined SCALE.)
>
> --
> Roger Barker, G4IDE - roger@peaksys.co.uk
> For UI-View go to - http://www.packetradio.org.uk
> For WinPack go to - http://www.peaksys.co.uk
>
> ---
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapir.org
>
>

```

APRSDos REPLY/COMMENT:

```

Reply mail addr: wb4apr@amsat.org
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html
See Maryland APRS LIVE: http://web.usna.navy.mil/~bruninga/aprs.html
See GPS on ANY radio: http://www.tapir.org/tapir/html/mic-e.html

```

---

```

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```

## 106. [aprsspec] Re: More about Center and Range

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Thu, 18 May 2000 08:47:00 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-84648-2000.05.18-07.49.35--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

```

On Thu, 18 May 2000, Roger Barker wrote:

```

> Or rather:-

```

> View centre - 5258.24N, 00002.77W  
> View range (or range scale) - 50 miles

Yes, VIEW is better...

---

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## 107. [aprsspec] Re: More about Center and Range

From: Steve Dimse <sdimse@earthlink.net>  
Date: Thu, 18 May 2000 16:33:40 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84684-2000.05.18-15.36.11--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 5/17/00 10:49 AM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

> This one is short. please take time to read it. It REMOVES  
>RANGE! Thanks. Here is another try at a suggested wording that would be  
>acceptable to all authors:  
>

I have assiduously avoided this discussion, because I think the underlying premise is wrong. I do not feel that user-interface issues belong in the protocol document. If they are to be written, they should be done as a separate document. I argue no user interface issues should not be dictated, because it will reflect the status quo, and take away incentive and opportunity for people to innovate.

I get the impression that if Bob could have his way, every program would look exactly like APRSdos, use the same keystroke combinations, the same maps. Yes, as he points out, it would make it easier for anyone to go into an EOC and start using their program regardless of whose version is installed. But is this homogeneity a Good Thing? I say not.

The second APRS program out was MacAPRS, the third javAPRS. Neither of those two have ever had map scale. In the 4 years since I first released javAPRS, I do not recall a single request for this scale legend.

Bob by his own admission is uncomfortable with GUI environments, so his rules would naturally reflect a bias towards the keyboard environment. Even though Mac/WinAPRS does not show a range bar on the screen, it has a far more useful feature, the map caliper. Simply click and drag on a map, and you will see the precise distance displayed. Wanna see how long a mile is? Just drag the caliper out until you see 1 mile displayed.

I especially object to the requirement for a scale legend. By chance the map product I use the most (MapBlast) has this, but I cannot control it, and most other internet products do not contain it, nor is there any way for me to control most of the parameters Bob considers essential. For example, in the topo maps I can control the scale, but I cannot place a legend on the map, I cannot control the precise center, or even determine what it is.

Besides the underlying OS, the user interface is the thing that makes each program unique. Each program has attracted its acolytes, and their requests have driven the development of the program. Whether to include a scale legend should be up to the program authors, based on input from their users. If it was as important as Bob implies, it ought to be a most-requested feature, and given how easy it would be to implement, it would already be there. That it isn't in WinAPRS speaks volumes for the user's opinion of how important this feature is!

Steve K4HG

---

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## 108. [aprsspec] New Protocol??

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Thu, 18 May 2000 21:23:12 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84744-2000.05.18-23.25.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Bob, are all these packets supposed to be parse-able?  
Look particularly at the objects.

```
2000 5 19 2 48 0 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190247z3949.27N/08411.34Wv358/054/APRS/good RMC Fix
2000 5 19 2 48 4 WB4APR-9>APR840,NK8X-9,W8APR,WIDE*/V:@190247z3949.27N/08411.34Wv358/054/APRS/good RM#
Fix
2000 5 19 2 54 30 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190253z3951.85N/08414.91Wv269/060/APRS/good RMC
Fix
2000 5 19 2 55 1 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190238z3944.25N/08412.33Wv177/015/APRS/good RMC Fix
2000 5 19 2 55 15 WB4APR-9>APR840,NK8X-9*,WIDE,WIDE:>181320zenroute dayton
2000 5 19 2 57 9 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190255z3951.64N/08416.33Wv253/056/APRS/good RMC
Fix
2000 5 19 2 57 9 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:;APRSmotel*190254z3950.69N/0842560 WH000/000/Days
inn
2000 5 19 2 57 47 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:;APRSmotel*190254z3950.69N/0842560 WH000/000/Days
inn
2000 5 19 2 58 17 WB4APR-9>APR840,RELAY,W8APR,WIDE*/V:@190257z3951.31N/08419.42Wv269/056/APRS/good RMC
Fix
2000 5 19 2 59 13 WB4APR-9>APR840,NK8X-9,KC8HFX-10*,WIDE:@190239z3943.96N/084)2. 6Wv171/000/APRS/good
RMC Fix
2000 5 19 3 1 32 WB4APR-9>APR840,NK8X-9,W8APR,WIDE*/V:;!PQMmotel*290257z3950.6 N/04425..1WH000/000/Days
inn
2000 5 19 3 1 46 WB4APR-9>APR840,N8UR,WIDE*,WIDE/V:@190301z3951.38N/08423.45Wv275/051/APRS/good RMC Fix
2000 5 19 3 7 42
WB4APR-9>APR840,KC8HFX-10,KG9CN-10,KC6ETE-3*:@190307z3950.63N/08425.50Wv265/012/APRS/good RMC Fix
2000 5 19 3 8 9 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190241z3944.57N/08412.28Wv359/049/APRS/good RMC Fix
2000 5 19 3 8 29 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190307z3950.63N/08425.50Wv265/012/APRS/good RMC
Fix
2000 5 19 3 13 13 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190242z3945.27N/08412.23Wv021/047/APRS/good RMC Fix
2000 5 19 3 13 35 WB4APR-9>APR840,W8APR,WIDE*,WIDE:@190242z3945.27N/08412.23Wv021/047/APRS/good RMC Fix
```

---

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## 109. [aprsspec] Re: New Protocol??

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Fri, 19 May 2000 09:10:13 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-84777-2000.05.19-03.12.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR14779-84744-2000.05.18-23.25.33--Ian.Wade#care4free.net@lists.tapr.org>, Brent  
Hildebrand <bhildebrand@earthlink.net> writes

>Bob, are all these packets supposed to be parse-able?

>Look particularly at the objects.

>

```
>2000 5 19 2 48 0 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190247z3949.27N/08411.34Wv3
>58/054/APRS/good RMC Fix
> 2000 5 19 2 48 4 WB4APR-9>APR840,NK8X-9,W8APR,WIDE*/V:@190247z3949.27N/08411.34
>Wv358/054/APRS/good RM# Fix
> 2000 5 19 2 54 30 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190253z3951.85N/08414.91W
>v269/060/APRS/good RMC Fix
> 2000 5 19 2 55 1 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190238z3944.25N/08412.33Wv177
>/015/APRS/good RMC Fix
> 2000 5 19 2 55 15 WB4APR-9>APR840,NK8X-9*,WIDE,WIDE:>181320zenroute dayton
> 2000 5 19 2 57 9 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190255z3951.64N/08416.33Wv
>253/056/APRS/good RMC Fix
> 2000 5 19 2 57 9 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:;APRSmotel*190254z3950.69N/
>0842560 WH000/000/Days inn
> 2000 5 19 2 57 47 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:;APRSmotel*190254z3950.69N
>/0842560 WH000/000/Days inn
> 2000 5 19 2 58 17 WB4APR-9>APR840,RELAY,W8APR,WIDE*/V:@190257z3951.31N/08419.42
>Wv269/056/APRS/good RMC Fix
> 2000 5 19 2 59 13 WB4APR-9>APR840,NK8X-9,KC8HFX-10*,WIDE:@190239z3943.96N/084)2
>. 6Wv171/000/APRS/good RMC Fix
> 2000 5 19 3 1 32 WB4APR-9>APR840,NK8X-9,W8APR,WIDE*/V:;!PQMmotel*290257z3950.6
>N/04425..1WH000/000/Days inn
> 2000 5 19 3 1 46 WB4APR-9>APR840,N8UR,WIDE*,WIDE/V:@190301z3951.38N/08423.45Wv2
>75/051/APRS/good RMC Fix
> 2000 5 19 3 7 42 WB4APR-9>APR840,KC8HFX-10,KG9CN-10,KC6ETE-3*:@190307z3950.63N/
>08425.50Wv265/012/APRS/good RMC Fix
> 2000 5 19 3 8 9 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190241z3944.57N/08412.28Wv359/
>049/APRS/good RMC Fix
> 2000 5 19 3 8 29 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190307z3950.63N/08425.50Wv
>265/012/APRS/good RMC Fix
> 2000 5 19 3 13 13 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190242z3945.27N/08412.23Wv02
```

```
>1/047/APRS/good RMC Fix
> 2000 5 19 3 13 35 WB4APR-9>APR840,W8APR,WIDE*,WIDE:@190242z3945.27N/08412.23Wv0
>21/047/APRS/good RMC Fix
```

They all look OK to me, except #s 7, 8, 10, 11:

```
~~~~~
APRSDEC. APRS Packet Decoder.
Version 1.0.1b (5 May 2000)
by Ian Wade, G3NRW (g3nrw@arrl.net)
```

```
Runtime      = 19-May-2000 08:59:53
Input file   = brentpkt.txt
Output file  = brent.out
```

NOTE: If this report contains anything that you think is incorrect,  
please email it to g3nrw@arrl.net for investigation. Thank you.

```
-----
Record # 1
WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190247z3949.27N/08411.34Wv358/054/APRS/good RMC Fix
APRS Data Type= Posit w/ time. With APRS
Day=19 Time=02hrs 47mins UTC
Lat= 39 deg 49 min 16 sec N   Long= 84 deg 11 min 20 sec W
Icon= Van   Overlay= (none)
Course= 358 deg Speed= 54 knots ( 62 mph)
```

```
-----
Record # 2
WB4APR-9>APR840,NK8X-9,W8APR,WIDE*/V:@190247z3949.27N/08411.34Wv358/054/APRS/good RM# Fix
APRS Data Type= Posit w/ time. With APRS
Day=19 Time=02hrs 47mins UTC
Lat= 39 deg 49 min 16 sec N   Long= 84 deg 11 min 20 sec W
Icon= Van   Overlay= (none)
Course= 358 deg Speed= 54 knots ( 62 mph)
```

```
-----
Record # 3
WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190253z3951.85N/08414.91Wv269/060/APRS/good RMC Fix
APRS Data Type= Posit w/ time. With APRS
Day=19 Time=02hrs 53mins UTC
Lat= 39 deg 51 min 51 sec N   Long= 84 deg 14 min 55 sec W
Icon= Van   Overlay= (none)
Course= 269 deg Speed= 60 knots ( 69 mph)
```

```
-----
Record # 4
WB4APR-9>APR840,RELAY,WIDE,WIDE:@190238z3944.25N/08412.33Wv177/015/APRS/good RMC Fix
APRS Data Type= Posit w/ time. With APRS
Day=19 Time=02hrs 38mins UTC
Lat= 39 deg 44 min 15 sec N   Long= 84 deg 12 min 20 sec W
Icon= Van   Overlay= (none)
Course= 177 deg Speed= 15 knots ( 17 mph)
```

```
-----
Record # 5
WB4APR-9>APR840,NK8X-9*,WIDE,WIDE:>181320zenroute dayton
APRS Data Type= Status
Day=18 Time=13hrs 20mins UTC
```

```
-----
Record # 6
WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190255z3951.64N/08416.33Wv253/056/APRS/good RMC Fix
APRS Data Type= Posit w/ time. With APRS
Day=19 Time=02hrs 55mins UTC
Lat= 39 deg 51 min 38 sec N   Long= 84 deg 16 min 20 sec W
Icon= Van   Overlay= (none)
Course= 253 deg Speed= 56 knots ( 64 mph)
```

```
-----
Record # 7
WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:;APRSmotel*190254z3950.69N/0842560WH000/000/Days inn
APRS Data Type= Object
Object Name= APRSmotel (Live)
Day=19 Time=02hrs 54mins UTC
Lat= 39 deg 50 min 41 sec N   Long=INVALID LONG
Icon= Num Circle 0   Overlay= (none)
```

-----  
Record # 8

WB4APR-9>APR840,W8APR,WIDE\*,WIDE/V:;APRSmotel\*190254z3950.69N/0842560WH000/000/Days inn  
APRS Data Type= Object  
Object Name= APRSmotel (Live)  
Day=19 Time=02hrs 54mins UTC  
Lat= 39 deg 50 min 41 sec N Long=INVALID LONG  
Icon= Num Circle 0 Overlay= (none)

-----  
Record # 9

WB4APR-9>APR840,RELAY,W8APR,WIDE\*/V:@190257z3951.31N/08419.42Wv269/056/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=02hrs 57mins UTC  
Lat= 39 deg 51 min 19 sec N Long= 84 deg 19 min 25 sec W  
Icon= Van Overlay= (none)  
Course= 269 deg Speed= 56 knots ( 64 mph)

-----  
Record # 10

WB4APR-9>APR840,NK8X-9,KC8HFX-10\*,WIDE:@190239z3943.96N/084)2.6Wv171/000/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=02hrs 39mins UTC  
Lat= 39 deg 43 min 58 sec N Long= 84 deg 0 min 4 sec (\*\* BAD E/W INDICATOR)  
Icon= Num Circle 1 Overlay= (none)

-----  
Record # 11

WB4APR-9>APR840,NK8X-9,W8APR,WIDE\*/V:;!PQMmotel\*290257z3950.6N/04425..1WH000/000/Days inn  
APRS Data Type= Object  
Object Name= !PQMmotel (Live)  
Day=29 Time=02hrs 57mins UTC  
Lat= 39 deg 50 min 4 sec (\*\* BAD N/S INDICATOR) Long=(\*\* BAD DEG) 5 min 1 sec (\*\* BAD E/W INDICATOR)  
Icon= Circle Overlay= 0

-----  
Record # 12

WB4APR-9>APR840,N8UR,WIDE\*,WIDE/V:@190301z3951.38N/08423.45Wv275/051/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=03hrs 01mins UTC  
Lat= 39 deg 51 min 23 sec N Long= 84 deg 23 min 27 sec W  
Icon= Van Overlay= (none)  
Course= 275 deg Speed= 51 knots ( 59 mph)

-----  
Record # 13

WB4APR-9>APR840,KC8HFX-10,KG9CN-10,KC6ETE-3\*:@190307z3950.63N/08425.50Wv265/012/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=03hrs 07mins UTC  
Lat= 39 deg 50 min 38 sec N Long= 84 deg 25 min 30 sec W  
Icon= Van Overlay= (none)  
Course= 265 deg Speed= 12 knots ( 14 mph)

-----  
Record # 14

WB4APR-9>APR840,RELAY,WIDE,WIDE:@190241z3944.57N/08412.28Wv359/049/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=02hrs 41mins UTC  
Lat= 39 deg 44 min 34 sec N Long= 84 deg 12 min 17 sec W  
Icon= Van Overlay= (none)  
Course= 359 deg Speed= 49 knots ( 56 mph)

-----  
Record # 15

WB4APR-9>APR840,W8APR,WIDE\*,WIDE/V:@190307z3950.63N/08425.50Wv265/012/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=03hrs 07mins UTC  
Lat= 39 deg 50 min 38 sec N Long= 84 deg 25 min 30 sec W  
Icon= Van Overlay= (none)  
Course= 265 deg Speed= 12 knots ( 14 mph)

-----  
Record # 16

WB4APR-9>APR840,RELAY,WIDE,WIDE:@190242z3945.27N/08412.23Wv021/047/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=02hrs 42mins UTC  
Lat= 39 deg 45 min 16 sec N Long= 84 deg 12 min 14 sec W

Icon= Van Overlay= (none)  
Course= 021 deg Speed= 47 knots ( 54 mph)

-----  
Record # 17  
WB4APR-9>APR840,W8APR,WIDE\*,WIDE:@190242z3945.27N/08412.23Wv021/047/APRS/good RMC Fix  
APRS Data Type= Posit w/ time. With APRS  
Day=19 Time=02hrs 42mins UTC  
Lat= 39 deg 45 min 16 sec N Long= 84 deg 12 min 14 sec W  
Icon= Van Overlay= (none)  
Course= 021 deg Speed= 47 knots ( 54 mph)

+++++ END OF INPUT FILE +++++

~~~~~  
73
Ian, G3NRW
Technical Editor, APRS Protocol Specification
***** Third draft now available *****

--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+

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110. [aprsspec] Re: New Protocol??

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Fri, 19 May 2000 06:19:37 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-84802-2000.05.19-08.21.48--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> They all look OK to me, except #s 7, 8, 10, 11:
>

<much deleted>

Yes, those were the objects. The others looked fine.

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111. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 22 May 2000 00:46:44 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-85225-2000.05.21-23.50.30--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 18 May 2000, Steve Dimse wrote:

> I get the impression that if Bob could have his way, every program would
> look exactly like APRSdos, use the same keystroke combinations, the same
> maps.

NO, but I do expect that EVERY user looking at an area 32 miles around
Dayton Hamvention for example on WHATEVER map or MAP system they are
using, would all describe that "same" AREA that they see in the SAME way
to a 3rd party.

It just amazes me that we have such strong objections to using the
word "RANGE" to describe an ENGLISH term that means "an area 32 miles
around the Dayton Hamvention".

I just cannot understand how anyone can misinterpret that. The word

"around" even derives its meaning from the concept of a circle with a radius of that dimension.

> Yes, as he points out, it would make it easier for anyone to go
> into an EOC and start using their program regardless of whose version is
> installed. But is this homogeneity a Good Thing? I say not.

NO! It allows anyone on any communications channel to "describe" the "size" of what he is LOOKING at on HIS screen in an UNAMBIGUOUS way. It has NOTHING TO DO with what program he is using or how he uses it.

> The second APRS program out was MacAPRS, the third javAPRS. Neither of
> those two have ever had map scale.

And that is their number one failing when used in a cross platform, network of other users trying to communicate what they SEE on their maps. It is this total confusion and inability for a MAC/WIN user to describe what his view to a NON _MAC/WIN user that is driving this issue!

Mac/WinAPRS ALSO DO NOT DEFINE APRS either.

> In the 4 years since I first released javAPRS, I do not recall a single
> request for this scale legend.

I have been asking for it for over 4 years.

> I especially object to the requirement for a scale legend. By chance the
> map product I use the most (MapBlast) has this, but I cannot control it,
> and most other internet products do not contain it...

The failure of the pretty-map-makers to provide meaningful legends or quantifiable scale to the users should not DRIVE the design of APRS nor trap us into furthering this omission.

> nor is there any way for me to control most of the parameters Bob
> considers essential. For example, in the topo maps I can control the
> scale, but I cannot place a legend on the map, I cannot control the
> precise center, or even determine what it is.

You dont understand at all. I am in no way asking for anyone to control anything. I AM ONLY ASKING THAT ALL MAPS DISPLAY TO THE USER A COMMON METRIC that conveys to him the approximate CENTER and "extent" of each MAP view so that THAT user can DESCRIBE it to SOMEONE ELSE in a consistent, concise and unambiguous way that will be understood by all APRS users across all platforms, and all software.

If we AUTHORS cannot agree on a common basis then this is PROOF POSITIVE that our users will be hopelessly confused and be UNABLE to communicate their views across different systems and communications channels.

> Besides the underlying OS, the user interface is the thing that makes
> each program unique. Each program has attracted its accolytes, and their
> requests have driven the development of the program. Whether to include a
> scale legend should be up to the program authors, based on input from
> their users. If it was as important as Bob implies, it ought to be a
> most-requested feature, and given how easy it would be to implement, it
> would already be there. That it isn't in WinAPRS speaks volumes for the
> user's opinion of how important this feature is!

It could also be said that it speaks volumes of why we still have MANY people who are FULLY computer literate, and fully conversant with WIndows and state-of the art in GUI's who still use a CRUDE, OLD and ANTIQUATED program like APRSdos INSTEAD Of WinAPRS.

bob

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112. [aprsspec] Re: New Protocol??

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 22 May 2000 00:56:16 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-85227-2000.05.21-23.58.30--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

On Thu, 18 May 2000, Brent Hildebrand wrote:

> Bob, are all these packets supposed to be parse-able?
> Look particularly at the objects.

Just got back from dayton and it s past midnight. Nothing jumps out as me
as being amiss other than the second one below.., can you give me a hint?

> 2000 5 19 2 57 47 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V::APRSmotel*190254z3950.69N/0842560
WH000/000/Days inn
> 2000 5 19 3 1 32 WB4APR-9>APR840,NK8X-9,W8APR,WIDE*/V:;!PQMmotel*290257z3950.6
N/04425..1WH000/000/Days inn

Have no idea where this got garbled. but you wouldnt believe the QRM in
Dayton!

> 2000 5 19 3 7 42
WB4APR-9>APR840,KC8HFX-10,KG9CN-10,KC6ETE-3*:@190307z3950.63N/08425.50Wv265/012/APRS/good RMC Fix
> 2000 5 19 3 8 9 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190241z3944.57N/08412.28Wv359/049/APRS/good RMC Fix
> 2000 5 19 3 8 29 WB4APR-9>APR840,W8APR,WIDE*,WIDE/V:@190307z3950.63N/08425.50Wv265/012/APRS/good RMC
Fix
> 2000 5 19 3 13 13 WB4APR-9>APR840,RELAY,WIDE,WIDE:@190242z3945.27N/08412.23Wv021/047/APRS/good RMC
Fix
> 2000 5 19 3 13 35 WB4APR-9>APR840,W8APR,WIDE*,WIDE:@190242z3945.27N/08412.23Wv021/047/APRS/good RMC
Fix
>
>
>
> ---
> You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
>
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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113. [aprsspec] Re: New Protocol??

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 22 May 2000 01:05:13 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-85243-2000.05.22-00.07.58--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 18 May 2000, Brent Hildebrand wrote:

> Bob, are all these packets supposed to be parse-able?
> Look particularly at the objects.
>

::APRSmotel*190254z3950.69N/0842560 WH000/000/Days inn
::APRSmotel*190254z3950.69N/0842560 WH000/000/Days inn
:@190257z3951.31N/08419.42Wv269/056/APRS/good RMC Fix
:@190239z3943.96N/084)2. 6Wv171/000/APRS/good RMC Fix
:;!PQMmotel*290257z3950.6 N/04425..1WH000/000/Days inn

Nope, these are all garbles..
The objects are all the same packet. Cleary there are bit errors
introduced by the "system" somewhere..

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114. [aprsspec] Re: More about Center and Range

From: Steve Dimse K4HG <k4hg@tapr.org>
Date: Mon, 22 May 2000 14:59:59 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-85387-2000.05.22-14.02.36--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 5/22/00 12:46 AM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

>> nor is there any way for me to control most of the parameters Bob
>> considers essential. For example, in the topo maps I can control the
>> scale, but I cannot place a legend on the map, I cannot control the
>> precise center, or even determine what it is.
>
>You dont understand at all. I am in no way asking for anyone to control
>anything. I AM ONLY ASKING THAT ALL MAPS DISPLAY TO THE USER A COMMON
>METRIC that conveys to him the approximate CENTER and "extent" of each MAP
>view so that THAT user can DESCRIBE it to SOMEONE ELSE in a consistent,
>concise and unambiguous way that will be understood by all APRS users
>across all platforms, and all software.
>
I think you didn't understand what I am saying. As a programmer, I have
no control over whether MapBlast, Topozone, or TIGER chooses to implement
something. Therefore you are excluding a bunch of potentially useful
sites and features from the internet system because they do not implement
the features you and a handful of others consider important.

Steve K4HG

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115. [aprsspec] Re: More about Center and Range

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 22 May 2000 16:34:49 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-85409-2000.05.22-15.37.38--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Mon, 22 May 2000, Steve Dimse K4HG wrote:

> >You dont understand at all. I am in no way asking for anyone to control
> >anything. I AM ONLY ASKING THAT ALL MAPS DISPLAY TO THE USER A COMMON
> >METRIC that conveys to him the approximate CENTER and "extent" of each MAP
> >view so that THAT user can DESCRIBE it to SOMEONE ELSE in a consistent,
> >concise and unambiguous way that will be understood by all APRS users
> >across all platforms, and all software.
> >
> I think you didn't understand what I am saying. As a programmer, I have
> no control over whether MapBlast, Topozone, or TIGER chooses to implement
> something. Therefore you are excluding a bunch of potentially useful
> sites and features from the internet system because they do not implement
> the features you and a handful of others consider important.

Yes, but cannot any application that uses one of these maps also display
the center and range of the map, somehow? It does not have to be "on" or
"in" the bitmap, it just has to be "associated" with the map view. When I
say "legend" I am simply asking for a "note" somewhere, anywhere that
conveys to the user the "size" and "location" of the map.

A map without a scale is just a pretty picture...

Bob

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116. [aprsspec] Re: More about Center and Range

From: Steve Dimse K4HG <k4hg@tapr.org>
Date: Tue, 23 May 2000 01:23:32 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-85504-2000.05.23-00.25.50--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 5/22/00 4:34 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

```
>> >You dont understand at all. I am in no way asking for anyone to control
>> >anything. I AM ONLY ASKING THAT ALL MAPS DISPLAY TO THE USER A COMMON
>> >METRIC that conveys to him the approximate CENTER and "extent" of each MAP
>> >view so that THAT user can DESCRIBE it to SOMEONE ELSE in a consistent,
>> >concise and unambiguous way that will be understood by all APRS users
>> >across all platforms, and all software.
>> >
>> I think you didn't understand what I am saying. As a programmer, I have
>> no control over whether MapBlast, Topozone, or TIGER chooses to implement
>> something. Therefore you are excluding a bunch of potentially useful
>> sites and features from the internet system because they do not implement
>> the features you and a handful of others consider important.
>
>Yes, but cannot any application that uses one of these maps also display
>the center and range of the map, somehow? It does not have to be "on" or
>"in" the bitmap, it just has to be "associated" with the map view. When I
>say "legend" I am simply asking for a "note" somewhere, anywhere that
>conveys to the user the "size" and "location" of the map.
>
No, in most cases it is not possible to determine the scale of these
internet maps. So I guess guess you want me to shut the whole thing
down...
```

Steve K4HG

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117. [aprsspec] Re: New Protocol??

From: Mike Musick <mcmusick@anet-stl.com>
Date: Tue, 23 May 2000 14:44:42 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: Bob Bruninga <bruninga@nadn.navy.mil>
Message-ID: <LYR11589-85631-2000.05.23-14.50.38--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
>On Thu, 18 May 2000, Brent Hildebrand wrote:
>
>> Bob, are all these packets supposed to be parse-able?
>> Look particularly at the objects.
>>
>::APRSmotel*190254z3950.69N/0842560 WH000/000/Days inn
>::APRSmotel*190254z3950.69N/0842560 WH000/000/Days inn
>:@190257z3951.31N/08419.42Wv269/056/APRS/good RMC Fix
>:@190239z3943.96N/084)2. 6Wv171/000/APRS/good RMC Fix
>::!PQMmotel*290257z3950.6 N/04425..1WH000/000/Days inn
>
>Nope, these are all garbles..
>The objects are all the same packet. Cleary there are bit errors
>introduced by the "system" somewhere..
```

I was monitoring A LOT(!!!) of garbage packets, especially on Friday evening. We had a glitched tracker up north in constant keydown sending GPS output in converse mode. The WIDE would break through the mess, but otherwise it was a QRM nightmare.

But given the tremendous collision problem overall, is it possible that somebody who was digipeating had PASSALL turned on? I've never used PASSALL, but I have to wonder if this function will put good checksums on bad packets if they're digi'ed.

...mike

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118. [aprsspec] Re: New Protocol??

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Tue, 23 May 2000 19:36:33 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-85667-2000.05.23-18.38.56--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Tue, 23 May 2000, Mike Musick wrote:

> But given the tremendous collision problem overall, is it possible
> that somebody who was digipeating had PASSALL turned on? I've never
> used PASSALL, but I have to wonder if this function will put good
> checksums on bad packets if they're digi'ed.

You bet! if any digi anywhere has PASSALL on, it is an absolute disaster,
and you cannot find the culprit! The only way to find it is to build
specific hard-coded DIGI calls, one at a time through all digis in an area
and hope that this way you can slowly but surely identify the bad one.

Yes, the packets will have GOOD CRC's after being digieated... :-(

de WB4APR, Bob

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119. [aprsspec] Yet another Kenwood bug?

From: Ian Wade <Ian.Wade@care4free.net>
Date: Thu, 25 May 2000 15:28:16 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86290-2000.05.25-09.31.30--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Browsing through some IGate output, I see a lot of packets apparently from Kenwood
D700s, looking something like this:

```
@242035z0123.45N/01234.56W>291/006/TM-D7/M3/RETURNING] "5#}TM-D700 & GPS-45 A=000338
                                     ~~~~~~
```

Is the comment field (following "...291/006") generated automatically?

The encoded altitude "5#} decodes to 338 feet.

The very last item of data appears to be the same altitude, in plain text.

However, it isn't the altitude, as they omitted the slash before the "A=".

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

***** Third draft now available *****

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
|                  email: g3nrw@arrrl.net                |
|                                                          |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER:      http://www.netro.co.uk/aprs.htm |
+-----+
```

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120. [aprsspec] Re: Yet another Kenwood bug?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Thu, 25 May 2000 14:32:03 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-86358-2000.05.25-13.35.09--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 25 May 2000, Ian Wade wrote:

> Browsing through some IGate output, I see a lot of packets apparently from
> Kenwood D700s, looking something like this:

>

> @242035z0123.45N/01234.56W>291/006/TM-D7/M3/

> RETURNING] "5#}TM-D700 & GPS-45 A=000338

>

> Is the comment field (following "...291/006") generated automatically?

> The encoded altitude "5#} decodes to 338 feet.

> The very last item of data appears to be the same altitude, in plain text.

> However, it isn't the altitude, as they omitted the slash before the "A=".

What you are seeing is a Mic-E "converted" packet. We have no idea who converted it, and everyone does it differently to get the embedded control characters though APRSServe as printable ASCII.

I fought this battle over and over with Steve. Remember, I wanted a STANDARD conversion of the Mic-E format by ALL Igates to a CONSISTENT format. It gave a consistent format for further parsing AND it gave a one BYTE identifier as to WHO's software did the conversion! Thus we had all we needed for CONSISTENT parsing AND future troubleshooting...

Now every authors software converts it DIFFERENTLY before sending it on (in 7 bit printable ASCII) to APRSServe. Thus you have no way of parsing it consistently. Since the ALTITUDE is now added as the first 4 bytes of the STATUS text portion, then where it will be in the Mic-E "converted" format via APRSServe, depends only on which author converted it.

I think this is stupid and will just be a forever problem. I published to ALL authors the recommended standard conversion format. Steve was the big objector to any standardization. Now that he is gone, maybe we can bring this back up and get agreement.

There are now 6 different version of Mic-E devices transmitting Mic-E and how many different IGate softwares converting them to how many different formats. Lets say 6. Thus we have 36 different possible formats... all for the same information. Darn it, we need a STANDARD!

de WB4APR, Bob

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121. [aprsspec] Re: Yet another Kenwood bug?

From: Cap Pennell <cap@cruzio.com>
Date: Thu, 25 May 2000 12:23:55 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86369-2000.05.25-14.27.48--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 07:28 AM 5/25/2000, Ian Wade wrote:

>The very last item of data appears to be the same altitude, in plain text.

>

>However, it isn't the altitude, as they omitted the slash before the "A=".

Needing a "/" before the "A=" is news to me. We've been using "A=aaaaaa" for the altitude display in APRSDos for some time and I didn't know that. Not sure the "/" is needed in APRSDos. Do other flavors use the "A=aaaaaa" for display at all yet? Hope so. Guess I should have read page 25 of the [aprs101m.pdf](#) proposal more carefully.
73, Cap KE6AFE

--

Cap Pennell
Santa Cruz, CA 95062-1002 3658.93N/12200.91W [CM86xx]
email: cap@cruzio.com home page: <http://members.cruzio.com/~cap>
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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122. [aprsspec] Re: Yet another Kenwood bug?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Thu, 25 May 2000 15:41:08 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86373-2000.05.25-14.44.12--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 25 May 2000, Cap Pennell wrote:

> Needing a "/" before the "A=" is news to me. We've been using "A=aaaaaa"
> for the altitude display in APRSDos for some time and I didn't know
> that. Not sure the "/" is needed in APRSDos.

Yep... Bob

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123. [aprsspec] Re: Yet another Kenwood bug?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Thu, 25 May 2000 15:58:47 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86378-2000.05.25-15.01.12--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My apologies, I thought I was responding privately to the APRS Working Group. Even so, I always welcomed Steve's opinions, because the ensuing discussions were the only way to hammer out ideas and arrive at what we think is the best way to do things.

He had good points about how hard it was to standardise on the growing plethora of Mic-E implementations and how there was no perfect solution..

This was not intended to denigrate those discussions.
Bob

On Thu, 25 May 2000, Bob Bruninga wrote:

> What you are seeing is a Mic-E "converted" packet. We have no idea who
> converted it, and everyone does it differently to get the embedded control
> characters though APRSServe as printable ASCII.
>
> I fought this battle over and over with Steve.
> Remember, I wanted a STANDARD conversion of the Mic-E format by ALL Igates
> to a CONSISTENT format. It gave a consistent format for further parsing
> AND it gave a one BYTE identifier as to WHO's software did the conversion!
> Thus we had all we needed for CONSISTENT parsing AND future
> troubleshooting...
>
> Now every authors software converts it DIFFERENTLY before sending
> it on (in 7 bit printable ASCII) to APRSServe. Thus you have no way of
> parsing it consistently. Since the ALTITUDE is now added as the first 4
> bytes of the STATUS text portion, then where it will be in the Mic-E
> "converted" format via APRSServe, depends only on which author converted
> it.
>
> I think this is stupid and will just be a forever problem. I published to
> ALL authors the recommended standard conversion format. Steve was the big
> objector to any standardization....

etc...

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124. [aprsspec] Re: Yet another Kenwood bug?

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Thu, 25 May 2000 16:26:27 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86425-2000.05.25-18.29.24--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Actually, I don't like your standard either. Not that it would not work, but it is unnecessary. A simple fix would have been to encode Mic-E packets using an Internet standard such as Base64. And decode it at the IGate. Then you have the ORIGINAL packet, not some cooked up packet. But that has not won any favor either. My proposal was something like this: The converted packet would be CALLSIGN>BASE64:base64_encoded_data_goes here.

Example:
Original packet:
KF6VMM-9>S4PTQR,N6EX-3*,WIDE2-1/1:'-HeIR">/]"6o}

Encoded packet on TCP/IP:
KH2Z>BASE64:S0Y2Vk1NLTK+UzRQVFFSLE42RVgtMyosV0lERTItMS8x0ictSGVsUh8+L10iNm99

To decode, you see that the packet is to BASE64, so, take the data portion, and reverse the Base64 and you get:

```
KF6VMM-9>S4PTQR,N6EX-3*,WIDE2-1/1:'-HeIR">/]"6o}
```

No loss of data. No funky conversion packet. Original data on the Far Side.

What about gating the packet to RF should that be required? Strip out the excess path, and make it a gated packet. Here would be the data portion.

```
}KF6VMM-9>S4PTQR:'-HeIR">/]"6o}
```

Brent

----- Original Message -----

From: Bob Bruninga <bruninga@nadn.navy.mil>
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Cc: <aprsspec@lists.tapr.org>
Sent: Thursday, May 25, 2000 11:32 AM
Subject: [aprsspec] Re: Yet another Kenwood bug?

```
> On Thu, 25 May 2000, Ian Wade wrote:
>
> > Browsing through some IGate output, I see a lot of packets apparently from
> > Kenwood D700s, looking something like this:
> >
> > @242035z0123.45N/01234.56W>291/006/TM-D7/M3/
> > RETURNING]"5#}TM-D700 & GPS-45 A=000338
> >      ^^^^      ^^^^^^^^
> > Is the comment field (following "...291/006") generated automatically?
> > The encoded altitude "5#" decodes to 338 feet.
> > The very last item of data appears to be the same altitude, in plain text.
> > However, it isn't the altitude, as they omitted the slash before the "A=".
>
> What you are seeing is a Mic-E "converted" packet. We have no idea who
> converted it, and everyone does it differently to get the embedded control
> characters though APRSServe as printable ASCII.
>
> I fought this battle over and over with Steve.
> Remember, I wanted a STANDARD conversion of the Mic-E format by ALL Igates
> to a CONSISTENT format. It gave a consistent format for further parsing
> AND it gave a one BYTE identifier as to WHO's software did the conversion!
> Thus we had all we needed for CONSISTENT parsing AND future
> troubleshooting...
>
> Now every authors software converts it DIFFERENTLY before sending
> it on (in 7 bit printable ASCII) to APRSServe. Thus you have no way of
> parsing it consistently. Since the ALTITUDE is now added as the first 4
> bytes of the STATUS text portion, then where it will be in the Mic-E
> "converted" format via APRSServe, depends only on which author converted
> it.
>
> I think this is stupid and will just be a forever problem. I published to
> ALL authors the recommended standard conversion format. Steve was the big
> objector to any standardization. Now that he is gone, maybe we can bring
> this back up and get agreement.
>
> There are now 6 different version of Mic-E devices transmitting Mic-E and
> how many different IGate softwares converting them to how many different
> formats. Lets say 6. Thus we have 36 different possible formats... all
> for the same information. Darn it, we need a STANDARD!
>
> de WB4APR, Bob
>
>
> ---
> You are currently subscribed to aprsspec as: bhildebrand@earthlink.net
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
>
>
```

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125. [aprsspec] Re: Yet another Kenwood bug?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Thu, 25 May 2000 20:26:43 -0400 (EDT)

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86436-2000.05.25-19.29.16--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 25 May 2000, Brent Hildebrand wrote:

> Actually, I don't like your standard either. Not that it would not
> work, but it is unnecessary. A simple fix would have been to encode
> Mic-E packets using an Internet standard such as Base64. And decode it
> at the IGate. Then you have the ORIGINAL packet, not some cooked up
> packet. But that has not won any favor either...

I never cared what the format was as long as we had a standard. Your proposal above is not backwards compatible with any existing software. It would require a mod to all user software for anyone looking at the APRServe stream. But since those same software are the basic engines for the IGates, I do think it could be phased in quickly...

So I am not opposed to it. But we just need everyone to implement it in one common manner...

Bob

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126. [aprsspec] Re: Yet another Kenwood bug?

From: Jeff King <jeff@aerodata.net>
Date: Thu, 25 May 2000 20:52:27 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86438-2000.05.25-19.54.06--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob Bruninga wrote:

> On Thu, 25 May 2000, Brent Hildebrand wrote:
>
> A simple fix would have been to encode
> > Mic-E packets using an Internet standard such as Base64. And decode it
> > at the IGate. Then you have the ORIGINAL packet, not some cooked up
> > packet. But that has not won any favor either...
>
> I never cared what the format was as long as we had a standard. Your
> proposal above is not backwards compatible with any existing software.

I'd rather see ONE standard that made sense then a tower of Bable that may result. I've looked at the spec, and in almost every case there appears to be multiple ways to do the same thing. I believe positions can be represented in at least four or five different ways, weather in at least that many ways and who knows what else.

As any programmer knows, trying to write parsing routines for multiple formats is more than trivial. While what's done is done, for the future the WG might consider picking the best format and making that the "must have" standard instead of continuing the dilution of the protocol. ONE standard, not the mish-mash of four+ ways to say the same thing. Just suggest one method, in the spec doc, instead of giving equal footing to all methods.

I like the idea of a base 64 standard as it is "C" friendly and should be able to be implemented on most small microcontrollers. While the compressed format is a nice size reduction, the algorithms needed to convert to it are not very microcontroller friendly (floating point and/or double longs). But I'll take compressed over NEMA any day ;-)

-Jeff

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127. [aprsspec] Re: Yet another Kenwood bug?

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Thu, 25 May 2000 18:08:44 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86448-2000.05.25-20.11.35--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, after some simple tests, APRSd does indeed pass 8-bit data, having passed successfully the top 50 ASCII characters in, and getting them back exactly as entered. Thus it appears, that APRSd does not have the APRServe limitation. But we still have a mixed system of APRServe and APRSd. So encoding is still required. My vote would be for a simple Base64 encoding. This will work for APRServe and APRSd.

It will also pass the callsign of the originating station, something that is not present currently. Of course, not all packets need encoding. This is what I would propose:

CALLSIGN>BASE64:base64_encoded_data

CALLSIGN is the callsign of the station entering the data to APRServe
BASE64 indicates the data is Base64 encoded
base64_encoded_data is the data in Base64 format

To reverse the process, receiving station detects the fact that the T0 field is BASE64. It then takes the data portion of the packet and UNBASE64s it and runs it back through their parser. No data loss. Works with APRServe and APRSd now.

Brent

----- Original Message -----
From: Bob Bruninga <bruninga@nadn.navy.mil>
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Sent: Thursday, May 25, 2000 5:26 PM
Subject: [aprsspec] Re: Yet another Kenwood bug?

> On Thu, 25 May 2000, Brent Hildebrand wrote:
>
> > Actually, I don't like your standard either. Not that it would not
> > work, but it is unnecessary. A simple fix would have been to encode
> > Mic-E packets using an Internet standard such as Base64. And decode it
> > at the IGate. Then you have the ORIGINAL packet, not some cooked up
> > packet. But that has not won any favor either...
>
> I never cared what the format was as long as we had a standard. Your
> proposal above is not backwards compatible with any existing software.
> It would require a mod to all user software for anyone looking at the
> APRServe stream. But since those same software are the basic engines for
> the IGates, I do think it could be phased in quickly...
>
> So I am not opposed to it. But we just need everyone to implement it in
> one common manner...
>
> Bob
>
>
>
> ---
> You are currently subscribed to aprsspec as: bhildebrand@earthlink.net
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>
>

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128. [aprsspec] Transparent FORMAT

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 26 May 2000 09:23:04 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-86575-2000.05.26-08.25.42--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 25 May 2000, Brent Hildebrand wrote:

> Bob Said:
> > I never cared what the format was as long as we had a standard. Your
> > proposal above is not backwards compatible....
> > But since those same software are the basic engines for
> > the IGates, I do think it could be phased in quickly...

> > So I am not opposed to it. But we just need everyone to implement it in
> > one common manner...
>
> Not backward compatible? Who cares? By your own account, everything
> needs to be changed anyway. Let's do it in a way that can fix the
> APRServe binary problem for good. Hmm, I wonder if APRSd talks 7 or 8
> bit. Off to test.

Actually, I am beginning to like the idea of a standard BINARY to 7 bit
ASCII conversion that will suit ALL applications. All we need to do is
specify an as yet-unused FORMAT character and it simply indicates that ALL
that follows is a converted packet.

Then everyone uses only the one standard DECODE routine to convert it back
to the original packet no matter what it is... End of all problems.

Did your proposal already pick out a FORMAT character?

de WB4APR.

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129. [aprsspec] Re: Yet another Kenwood bug?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 26 May 2000 09:27:29 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-86576-2000.05.26-08.29.53--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I like it. Looks good to me!
My idea preserved the original header and so can go over RF too.
But I think yours also is fully AX.25 compliant in KISS mode. Right?
In the below example the only difference would be that there will be DIGI
peater fields. But I think that is consistent with what you designed...

So if thats the case, I think yours wins...
Does anyone else see a problem?

DE wb4apr

On Thu, 25 May 2000, Brent Hildebrand wrote:

> CALLSIGN>BASE64:base64_encoded_data
>
> CALLSIGN is the callsign of the station entering the data to APRServe
> BASE64 indicates the data is Base64 encoded
> base64_encoded_data is the data in Base64 format
>
> To reverse the process, receiving station detects the fact that the T0 field is BASE64. It then takes
the data portion of the packet and UNBASE64s it and runs it back through their parser. No data loss.
Works with APRServe and APRSd now.

> Brent

>

>

> ----- Original Message -----

> From: Bob Bruninga <bruninga@nadn.navy.mil>
> To: APRS Spec Discussion List <aprsspec@lists.tapr.org>
> Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
> Sent: Thursday, May 25, 2000 5:26 PM
> Subject: [aprsspec] Re: Yet another Kenwood bug?

>

>

> > On Thu, 25 May 2000, Brent Hildebrand wrote:

> >

> > > Actually, I don't like your standard either. Not that it would not
> > > work, but it is unnecessary. A simple fix would have been to encode
> > > Mic-E packets using an Internet standard such as Base64. And decode it
> > > at the IGate. Then you have the ORIGINAL packet, not some cooked up
> > > packet. But that has not won any favor either...

> >

> > I never cared what the format was as long as we had a standard. Your
> > proposal above is not backwards compatible with any existing software.
> > It would require a mod to all user software for anyone looking at the
> > APRServe stream. But since those same software are the basic engines for

> > the IGates, I do think it could be phased in quickly...
> >
> > So I am not opposed to it. But we just need everyone to implement it in
> > one common manner...
> >
> > Bob
> >
> >
> >
> > ---
> > You are currently subscribed to aprsspec as: bhildebrand@earthlink.net
> > To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
> >
> >
>
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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130. [aprsspec] Re: Transparent FORMAT

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 26 May 2000 11:58:21 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-86600-2000.05.26-11.00.57--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Fri, 26 May 2000, Brent Hildebrand wrote:

> Format character? No. It keyed of the T0 field as this was data only
> being dealt with via APRServe. In this way, you knew the IGate station
> something we don't know now. And you reproducibly sent any binary data
> through APRServe, with path and data preserved. It is not intended to be
> on the air.

I'd prefer to see something that can be used anywhere transparently. But
I think yours will do that as well. right?

Bob

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131. [aprsspec] Re: Transparent FORMAT

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Fri, 26 May 2000 09:10:31 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86604-2000.05.26-11.13.01--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>On Fri, 26 May 2000, Brent Hildebrand wrote:

>
> > Format character? No. It keyed of the T0 field as this was data only
> being dealt with via APRServe. In this way, you knew the IGate station
> something we don't know now. And you reproducibly sent any binary data
> through APRServe, with path and data preserved. It is not intended to be
> on the air.

>
> I'd prefer to see something that can be used anywhere transparently. But
> I think yours will do that as well. right?

>
>Bob

Anywhere? I suppose if you add a digipeater path. But converting a packet to Base64 does increase its length a far bit (pun sort of intended), and the RF network can handle 8-bit. APRServe can not. My suggestion is really for the TCP/IP side. But I'm open to suggestions.

Brent

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132. [aprsspec] Re: Transparent FORMAT

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 26 May 2000 12:51:55 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-86620-2000.05.26-11.54.26--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Fri, 26 May 2000, Brent Hildebrand wrote:

> >I'd prefer to see something that can be used anywhere transparently. But
> >I think yours will do that as well. right?
>
> Anywhere? I suppose if you add a digipeater path. But converting a packet
> to Base64 does increase its length a far bit (pun sort of intended), and the
> RF network can handle 8-bit. APRServe can not. My suggestion is really for
> the TCP/IP side. But I'm open to suggestions.

Yep, I agree that it would be verbose, and no obvious need on RF. But I just figured we should not preclude that option. And I think you are saying that it will work there fine (with the digis included). I guess the expansion ratio is 2 bits per byte or about a 25% expansion? Or did I figger that wrong?

bob

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133. [aprsspec] Spec for Band ID needed

From: "Ev Tupis (W2EV)" <propnet@greeceny.com>
Date: Fri, 26 May 2000 13:16:00 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86623-2000.05.26-12.20.02--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I thought that I'd just put a bug in the ear of the folks who are in control of this sort of thing, that -- especially with the discussion of finding an APRS Service frequency on bands other than 2-meters, from a tactical and emergency/safety issue -- it will become imperative that some sort of "band of origination" flag be included in the protocol (even if it is simply added by GATEs during the process of GATE-ing).

Imagine seeing an emergency or health/welfare message coming across a screen and attempting to DF it using conventional DF techniques, not being able to do so because it originated on 10-meters or 6-meters or 440-MHz and was transparently GATED to 2-meters.

I know there are plenty of irons in the fire, this is just a gentle reminder, that's all.

Ev, W2EV

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

134. [aprsspec] Re: Yet another Kenwood bug?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 26 May 2000 16:34:00 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86676-2000.05.26-15.36.28--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

```
> On Thu, 25 May 2000, Brent Hildebrand wrote:
>
> > CALLSIGN>BASE64:base64_encoded_data
> >
> > CALLSIGN is the callsign of the station entering the data to APRServe
> > BASE64 indicates the data is Base64 encoded
> > base64_encoded_data is the data in Base64 format
```

I now realize I was mixing apples and oranges. The above packet is like 3rd party and the entire packet is base64 encoded. But since most of a packet is HEADER which is already all printable, this is somewhat innefficient.

Im leaning back towards:

```
SENDER>TOCALL,PATH,PATH:|base_64_encoded data
```

Where "|" here is a special so-far-unused FORMAT IDENTIFIER that says "take everything following this as base_64 encoded copy of the original packet data field. We would not actually use the "|" character since it is a reserve character, I only used it as an example.

This is completely reversible at the IGATE->RF end...

What do you think?

Bob

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135. [aprsspec] Center/Range Observations

From: Darrell Hale <halehome@home.com>
Date: Sat, 27 May 2000 01:18:02 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86758-2000.05.27-00.19.08--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

I just finished reading, in one sitting, the discussions that have resulted from the email "A Question about Map View and Range Scale" from Wed, 10 May 2000.

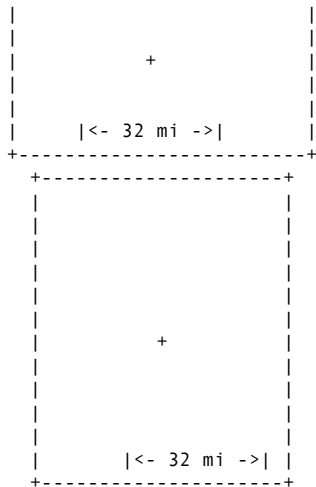
At the risk of (re)starting something, I wanted to make the following observations:

1) To me, the idea that the range circle is "the largest circle that can fit on the screen" is by definition only a minimal view of what can be seen on a display, since the display's height to width ratio will usually be different between any two users. Usually this should be "good enough" though since it estimates the bulk of what that the other person is seeing, and _gaurantees_ that anything within the defined circle should be on both displays. The unclear parts will be the corners, and the edges perpendicular the the screen's long axis. If it's not clear that something would be in your range circle, then fix it by recentering the circle or changing the range so it will be encompassed.

2) Even if you were to specify a rectangle percicely, that is also not be enough to allow a perfect recreation of a view, esp. if the recreated view will be on a smaller screen, lower resolution display, or with a different aspect ratio.

You will never be able to transfer two views EQUALLY between the following two screens. The top view (below) has extra W/E advantage over the bottom's N/S advantage. A Palm Pilot's display may be able to fit on my home computer's 19" CRT, but never the other way around. Center/Range or Rectangles may only give the recieving station a feel for how big the other user's view is, but that is usually all that is needed. By comparing center and range scale info, two users can at least approximate what the other is seeing and therefore "get on the same page" as it were.

+-----+



3) I would describe the difference between Bob's Range Scale and Street Atlas's distance (tick) scale this way:

Bob's range scale is always one-half of the distance along the map's shortest viewable axis.

Street Atlas's tick scale is simply the distance between the two vertical ticks on the |-----| graphic.

Using each requires a different technique: The Range Scale allows me to estimate distances by subdividing an overall number based on visually comparing relative segment lengths (ie: a distance that is about 75% that from the display center to the range circle, and given a 32 mile range scale, is about a 24 mile distance). The Street Atlas tick scale requires a cumulative addition of segments (ie: my index finger width for this particular screen is about one tick, the tick scale may be 0.2 miles, so a distance of about 13 fingers adds up to about 2.6 miles).

An on-screen click and drag caliper between two arbitrary points will always be the most accurate measurement of that distance. And it would be useful for estimating another user's range scale on the local map. But it is a poor tool to use if that is the only way available to generate my range scales for relaying to others, esp. if I am constantly making lots of map zoom changes.

There are at least two advantages of displaying a "Range Scale" value over a simple "arbitrary scale" value. First, my estimates are probably better, as ~125% of a "range scale" is probably easier to gauge than 14 finger widths times a "tick scale". In addition, the INFORMED/TRAINED user will know a 300% range scale distance refers to a long-axis measurement in an arbitrary window type "display view" and may not be reproducible on a tiny square display. Whereas a 25 unit SA "tick scale" provides no real information of the other user's overall display size, because the SA tick scale has no relation to the overall window size. I just tried resizing an SA display, and a very long and narrow display has the same scale as a square one. A range scale on the other hand would have changed to reflect the screen resizing based on the definition of "one-half of the distance along the map's shortest viewable axis".

4) If the goal is to describe the actual rectangle that the other person is seeing, then add the "missing parameter" that allows one to define the size of that box and to locate it on the map. (Although it still won't help describe the resolution on the map, the amount of map and icon details displayed, etc.)

I personally think that these two methods complement, rather than replace, each other. Voice users will most likely use the center/range construct, whereas fully defined rectangles construct could be used to more precisely transfer view parameters directly between two computers.

5) None of the real-world searches I have been on use computers. There is a great desire by many to change this, but paper will still rule for a very long time to come for a variety of reasons. The center/range metric described by Bob supports paper maps fairly well in two ways.

If a baseline computer view is defined such as the subject's last known point (LKP) with range X, a protractor (or a length of string) can be used to quickly draw an approximation of that screen view onto a paper map. Furthermore, if multiple views are defined/described, then multiple circles (overlapping or not) can be drawn on the paper map and referred to by some predefined area "name" such as the LKP, base area, clue area 1, etc.

Realistically, I doubt that drawing these circles would actually occur. More likely it would be done mentally. One method I like is to spread two fingers apart by the desired distance (Range Scale in this case) and going through the physical motion of drawing a circle as though I was using a protractor while mentally noting the area I was encompassing. Note, this works just as well on a computer screen as it does on a paper map.

The center/range construct's _main_ purpose is to allow someone to express what general coverage area they are seeing. This allows another person to construct some type of gauge for _their_own_use_, either by plotting a circle on their map, zooming and panning to recreate a similar screen view, or possibly figuring out mentally what the first person is talking based only on their familiarity with the area.

In the wonderful future to come, a large screen display (videowall :-) map could show the areas that multiple individual user workstations are concentrating on by showing their multiple center/range circles on the overall tactical map, and could capture those icons that are out of range of all of the "myopic" operators. One glance on the main tactical map could be the alert to focus attention on an area using a different computer's display. The tactical map would, among other things, help summarize where your operators are focusing their attention.

6) Maybe I should have spoken up long before, but the lack of any type of scale on applications like javAPRS has been a problem for me. Currently I just make very rough estimates on distances based solely on visual cues from the map itself and inherent knowledge of distances displayed. For example, the displayed distance between the DC and Baltimore beltways, or from the DC Beltway to the I-81 and I-66 intersection. This is fine for rough estimation, but stinks for getting details like how far are we from Manassas VA? With practice, I can now get fair results, but when I show others the types of maps I get the familiar blank-stare as they rarely know what they are looking for/at.

I agree that if a wonderful map site cannot allow you the control (or know) the map scale, or will not allow you to place icons and objects on the output which is to the specs satisfaction, then don't worry about it. If the remaining information does convey what the users think is useful, then it will be used anyhow. But that should not stop the spec from the range scale (or whatever) simply because you cannot implement it given a particular application quirk.

7) Finally, and most importantly, map reading and map usage itself is a skill. I would say that _most_ people are not very good at it. Even experts can get tripped up by various concepts because they may never have used that concept before, or have only used it in a limited way, or don't use it enough to be proficient, or may simply know it by another name.

For example, a "plotting" operator located at a stationary site who is reporting and controlling things around them will probably use different skills and techniques compared to the "navigator" operator who is interested in getting their moving vehicle from one place to another without incident.

The example of how the many different skilled users having never heard of a "range scale" is not surprising to me. They may simply not know what it is, or what good it can do for them, or may have ever needed it, or just don't recognize it by that name. That does not mean that it is not a useful tool/skill to know. I wonder how many might actually find it helpful once they were 1) taught what it was, and 2) were given the tools that would make it easy to use?

Ask that same group of people how to account for magnetic declination when doing compass work. I have seen people who are experts with map and compass "lose it" during a theoretical-type teaching discussion because what they are used to doing is not always well explained. Furthermore, I know two completely different techniques that both work, but are not compatible with each other. This may be part of the problem with discussing range circles vs. area rectangles.

Finally, I believe there was a sentiment expressed that much of this conversation was a disagreement in underlying technology. I disagree. I think the problem is the fundamental differences of how two people can describe their perceptions of the same thing differently. Two people will probably never agree 100% on what a map display is showing. Even if both were looking at the same size screen, differences in their training, experiences, interpretation, and even eyesight will create a different perceptions. The best we can hope for is to minimize those differences, not eliminate them.

Darrell Hale, N3KTP

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136. [aprsspec] Re: Center/Range Observations

From: Roger Barker <roger@peaksys.co.uk>
Date: Sat, 27 May 2000 09:14:47 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86772-2000.05.27-03.18.08--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In article <LYR13460-86758-2000.05.27-00.19.08--roger#peaksys.co.uk@lists.tapr.org>, Darrell Hale <halehome@home.com> writes

[snip]

>Usually this should be "good enough" though since it
>estimates the bulk of what that the other person is seeing, and _gaurantees_
>that anything within the defined circle should be on both displays.

^^^^^

[snip]

Isn't the whole point that "should" is "will"? At least in terms of the geographical area covered. (Or have I misunderstood it?)

--

Roger Barker, G4IDE - roger@peaksys.co.uk
For UI-View go to - <http://www.packetradio.org.uk>
For WinPack go to - <http://www.peaksys.co.uk>

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137. [aprsspec] Re: Center/Range Observations

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sat, 27 May 2000 10:13:12 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86805-2000.05.27-09.19.27--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Very good summary. I think I agree with everything you have said. And it describes in detail the nuances behind what I am trying to do. I have been hesitant to use so many words, fearing that no one would read it all, but you have summarized it quite well.

On Sat, 27 May 2000, Darrell Hale wrote:

> 1) To me, the idea that the range circle is "the largest circle that can fit
> on the screen" ... Usually this should be "good enough" though since it
> estimates the bulk of what that the other person is seeing, and _gaurantees_
> that anything within the defined circle should be on both displays.

>

> You will never be able to transfer two views EQUALLY between the following
> two [oblong] screens.. By comparing center
> and range scale info, two users can at least approximate what the other is
> seeing and therefore "get on the same page" as it were.

Yep, thats all I am trying to accomplish..
and the following is exactly why I cant work with "tiny-tick" scales.
I think the EYE can much better estimate the length of something small
compared to a long legend (visual division) than estimating something big
relative to a small legend (visual multiplication).

> Bob's range scale is always one-half of the distance along the map's
> shortest viewable axis.
> Street Atlas's tick scale is simply the distance between the two vertical

> ticks on the |-----| graphic.
>
> Using each requires a different technique: The Range Scale allows me to
> estimate distances by subdividing an overall number based on visually
> comparing relative segment lengths (ie: a distance that is about 75% that
> from the display center to the range circle, and given a 32 mile range
> scale, is about a 24 mile distance). The Streen Atlas tick scale requires a
> cumulative addition of segments (ie: my index finger width for this
> particular screen is about on tick, the tick scale may be 0.2 miles, so a
> distance of about 13 fingers adds up to about 2.6 miles).
>
> There are at least two advantages of displaying a "Range Scale" value over a
> simple "arbitrary scale" value. First, my estimates are probably better, as
> ~125% of a "range scale" is probably easier to gauge than 14 finger widths
> times a "tick scale".

Yes!

> Whereas a 25 unit SA "tick scale" provides no real information of
> the other user's overall display size, because the SA tick scale has no
> relation to the overall window size. I just tried resizing an SA display,
> and a very long and narrow display has the same scale as a square one. A
> range scale on the other hand would have changed to reflect the screen
> resizing based on the definition of "one-half of the distance along the
> map's shortest viewable axis".

Yes!

>
> 5) None of the real-world searches I have been on use computers...
> The Center/Range metric described by Bob supports paper maps fairly well
> in two ways.
>
> a protractor (or a length of string) can be used
> to quickly draw an approximation of that screen view onto a paper map.
>
> Realistically, I doubt that drawing these circles would actually occur. More
> likely it would be done mentally. One methond I like is to spread two
> fingers apart by the desired distance (Range Scale in this case) and going
> through the physical motion of drawing a circle as though I was using a
> protractor while mentally noting the area I was encompassing. Note, this
> works just as well on a computer screen as it does on a paper map.
>
> The center/range construct's _main_ purpose is to allow someone to express
> what general coverage area they are seeing. This allows another person to
> construct some type of gauge for _their_own_use_, either by plotting a
> circle on their map, zooming and panning to recreate a similiar screen view,
> or possbily figuring out mentally what the first person is talking based
> only on their familiarity with the area.

Yes, this is exactly what I am trying to standardize.

> In the wonferful future to come, a large screen display (videowall :-) map
> could show the areas that multiple individual user workstations are
> concentrating on by showing their multiple center/range circlces on the
> overall tactical map,
> ... This tactical map would, amoung other things, help summarize where
> your operators are focusing their attention.
>
>
> 6) Mabye I should have spoken up long before, but the lack of any type of
> scale on applications like javAPRS has been a problem for me. Currently I
> just make very rough estimates on distances based solely on visual cues from
> the map itself and inherent knowledge of distances displayed.

This really came home to me when someone sent me a MAP from Sout Africa asking me a detailed question about setting up Digipeaters. It was a beautiful color map comparable to any currently availabe map product. It showed 3 Digipeaters and callsigns. But I was absolutely clueless as to whether the digis were 5 miles apart or 50 miles apart! Being TOTALLY ignorant of the geography of South AFrica, I had NO visual clues. This incident CONVINCED me of the PROBLEM and that we MUST have a standard for conveyin MAP SCALE.

Remember 4 out of 10 American adults cannot even find the USA on a world map!!!!

> I agree that if a wonderful map site cannot allow you the control (or know)
> the map scale, or will not allow you to place icons and objects on the
> output which is to the specs satisfaction, then don't worry about it. If the
> remaining information does convey what the users think is useful, then it

> will be used anyhow. But that should not stop the spec from the range scale
> (or whatever) simply because you cannot implement it given a particular
> application quirk.

AND I thought when you REQUEST the map, that the URL contains the scale
you are requesting? Thus you should know the scale of what you get back.

> 7) Finally, and most importantly, map reading and map usage itself is a
> skill. I would say that most people are not very good at it.
>
> Finally, I believe there was a sentiment expressed that much of this
> conversation was a disagreement in underlying technology. I disagree. I
> think the problem is the fundamental differences of how two people can
> describe their perceptions of the same thing differently. Two people will
> probably never agree 100% on what a map display is showing. Even if both
> were looking at the same size screen, differences in their training,
> experiences, interpretation, and even eyesight will create a different
> perceptions. The best we can hope for is to minimize those differences, not
> eliminate them.
>
> Darrell Hale, N3KTP

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138. [aprsspec] Re: Center/Range Observations

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sat, 27 May 2000 10:20:26 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86808-2000.05.27-09.23.40--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Sat, 27 May 2000, Roger Barker wrote:

> >Usually this should be "good enough" though since it
> >estimates the bulk of what that the other person is seeing, and gaurantees
> >that anything within the defined circle should be on both displays.
>
> Isn't the whole point that "should" is "will"? At least in terms of the
> geographical area covered. (Or have I misunderstood it?)

Yes. Exactly.

Bob

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139. [aprsspec] Re: Center/Range Observations

From: Jim Wagner <wagnerj@proaxis.com>
Date: Sat, 27 May 2000 22:15:49 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86983-2000.05.28-00.18.21--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Wow.

This was very well thought out and well expressed.

The issue of gross differences between display resolution (as with a CRT vs
Palm) is an important contribution.

Jim Wagner
Oregon Research Electronics

wagnerj@proaxis.com Tangent, Oregon 97389
KA7EHK@KC7KFE.OR.U.S.A.NOAM near Corvallis OR, home of
ka7ehk@yahoo.com Oregon State University

A computer without Windows is like a cake without mustard. - anonymous

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140. [aprsspec] Re: Center/Range Observations

From: Darrell Hale <halehome@home.com>
Date: Sun, 28 May 2000 04:21:12 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-86999-2000.05.28-03.22.26--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>>Usually this should be "good enough" though since it
>>estimates the bulk of what that the other person is seeing, and _gaurantees_
>>that anything within the defined circle should be on both displays.
> ^^^^^^
>[snip]
>
>Isn't the whole point that "should" is "will"? At least in terms of the
>geographical area covered. (Or have I misunderstood it?)

No misunderstanding, "will" is the right word.

Given the amount of time it took to write and edit that email, if that is my
only mistake I must be on a roll.

I believe I was thinking to myself at that moment "reported APRS objects
will be within the circle, whereas map details should be about the same -
assuming an approximately equal representation of base map details by both
users on each of their displays." All of that just came out as "should be".

Darrell

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141. [aprsspec] OT: All text compression info, please?

From: "Ev Tupis (W2EV)" <propnet@greeceny.com>
Date: Mon, 29 May 2000 10:43:10 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-87198-2000.05.29-09.47.23--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'd like to learn about how one goes about compressing information in
such a way as it (the resulting compressing information) remains a
printable ASCII character. I don't know the key words to search on in
order to do an internet search engine search. I tried "huffman
encoding" but I think that could generate non printable characters.

Is someone in a position to point me in a direction in which I could
further my quest, please?

Ev, W2EV

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142. [aprsspec] Re: OT: All text compression info, please?

From: David VanHorn <dvanhorn@cedar.net>
Date: Mon, 29 May 2000 13:28:05 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-87227-2000.05.29-13.44.38--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

At 10:43 AM 5/29/00 -0400, Ev Tupis (W2EV) wrote:
>I'd like to learn about how one goes about compressing information in
>such a way as it (the resulting compressing information) remains a
>printable ASCII character.

I don't think this is possible.
You can compress ASCII by turning it into sixels, but the result is binary.

You can huffman encode, but the result is binary.
Etc..

You can represent a binary byte in hex, as FF for example, but that takes two bytes to do, and you've lost any compression you're likely to have gained.

- - -

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Where's Dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

-----BEGIN PGP SIGNATURE-----

Version: PGPfreeware 6.5.2 for non-commercial use <<http://www.pgp.com>>

iQA/AwUBOTLS1Yf1GDz116VWEQJqiACdGMHTDexypIKXyjp6ItUHLFwbGMArYE
4nQBzCt7P0jnkxULJ3flzZ9L
=jnm6

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143. [aprsspec] Re: OT: All text compression info, please?

From: "Ev Tupis (W2EV)" <propnet@greeceny.com>
Date: Tue, 30 May 2000 05:49:19 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-87363-2000.05.30-04.54.11--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> >I'd like to learn about how one goes about compressing information in
> >such a way as it (the resulting compressing information) remains a
> >printable ASCII character.
>
> I don't think this is possible.
> You can compress ASCII by turning it into sixels, but the result is binary.
> You can huffman encode, but the result is binary.
> Etc..
>
> You can represent a binary byte in hex, as FF for example, but that takes
> two bytes to do, and you've lost any compression you're likely to have
> gained.

Hi Dave,
Thanks for the reply. Your insight has given me more of a chance to think about it more deeply. As it turns out, I may have used the wrong term ("compression"), when I meant to use the term "encoding". (I'm learning, though) :o)

I'm going to go on a search engine search on that term to see what comes up. I seem to remember that UUEncoding allows normally non-transferable information to become transferable because it is converted to ASCII. I'm going to pursue that avenue for a while.

Your reply helped to focus me a bit more. Thanks for taking the time!
Warmly,
Ev, W2EV

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144. [aprsspec] Re: OT: All text compression info, please?

From: Darrell Hale <halehome@home.com>
Date: Tue, 30 May 2000 09:47:14 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-87390-2000.05.30-08.48.27--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Subject: OT: All text compression info, please?
>From: "Ev Tupis (W2EV)" <propnet@greeceny.com>
>Date: Mon, 29 May 2000 10:43:10 -0400
>X-Message-Number: 1
>

>I'd like to learn about how one goes about compressing information in
>such a way as it (the resulting compressing information) remains a
>printable ASCII character.

The only type of compression I can think of that would have a chance to do this is a dictionary type search where one of more ASCII symbols would represent a larger chunk of data. But the conditions to make that happen are usually very prohibitive.

For example, replacing the word "the" with the symbol "*" or the phrase "in my humble opinion" with the symbol "*IMHO" may get some compression in a whole paragraph of text. But noticeable gains usually only happens when most of the text is the same repetitive words or phrases, and control characters such as the *, which in this example represents the start of a symbol, can never appear in the regular text.

>I don't know the key words to search on in
>order to do an internet search engine search. I tried "huffman
>encoding" but I think that could generate non printable characters.

Data encoding is such a huge field that I doubt a search engine will be of help much. Some PhD level researchers spend all of their time working on just compression algorithms, so summing up what they do in a few words will be hard. Data encoding by definition is the balancing act done between many variables, and managing the tradeoffs that have to occur while developing any particular algorithm.

Darrell Hale

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145. [aprsspec] Re: OT: All text compression info, please?

From: David VanHorn <dvanhorn@cedar.net>
Date: Tue, 30 May 2000 09:42:32 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-87401-2000.05.30-09.59.47--lyris.aprsspec@tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>Hi Dave,
>Thanks for the reply. Your insight has given me more of a chance to
>think about it more deeply. As it turns out, I may have used the wrong
>term ("compression"), when I meant to use the term "encoding". (I'm
>learning, though) :o)

Well, if it's not compression that you want, then you can convert to hex at 2 bytes/char.
You only use 0-9 and A-F in ascii, and two chars represent any byte. 00 - FF
I'm sure there are other schemes, but probably not so simple to implement.
Look at half a byte, lookup table, output, look at other half, lookup, output...

- - -

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www.spamwhack.com A pre-emptive strike against spam!

Where's Dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

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Version: PGPfreeware 6.5.2 for non-commercial use <<http://www.pgp.com>>

iQA/AwUBOTPveIFlGDz1l6VWEQJJdQCeIWsLZZhveZ6P/kut+T4D00D/WdgAoLrf
MNQQXIiClvbi0pghAHBt/6pS
=EUHi
-----END PGP SIGNATURE-----

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146. [aprsspec] Re: OT: All text compression info, please?

From: James Wagner <ka7ehk@yahoo.com>
Date: Tue, 30 May 2000 09:05:50 -0700 (PDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-87414-2000.05.30-11.08.36--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greetings -

Base91 is one rather simple scheme. Check with the APRS Protocol Standard. I think that this is the method used by the packet BBS mail-forwarding system (ie, W0RLI, MSYS, et al).

The "UU" system (UUEncode, UUDecode) used on internet is an example of a process for encoding purely binary data into printable ASCII characters for text-oriented transport media. So is BinHex. And, I am sure that there are others.

Jim, KA7EHK

Do You Yahoo!?
Kick off your party with Yahoo! Invites.
<http://invites.yahoo.com/>

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147. [aprsspec] All ASCII encoding

From: "Ev Tupis (W2EV)" <propnet@greeceny.com>
Date: Tue, 30 May 2000 18:30:37 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-87502-2000.05.30-17.34.51--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Folks, thanks for taking the time to help me in my trek. I was able to glean tidbits from every response to get to where I need to be in my understanding. Thanks for putting up with my off topic request.

I am indebted to you all.

Regards,
Ev

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June 2000

Original source file: aprsspec.0006

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/aprssig/aprsspec/mail_archive/aprsspec.0006

1. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 9 Jun 2000 20:30:08 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-89877-2000.06.09-19.33.28--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dale,

I'm glad you asked. You are in the drivers seat now, so since we never could get all the authors to agree to a standard format, I now agree with Brent. We should convert ALL mic-E packets to base 64 transparently.

I propose that we choose a new unused FORMAT character. That signals ALL software everywhere that EVERYTHING that follows in that packet is BASE64. It is then back converted to ORIGINAL form at the other end. Not only does this solve the Mic-E problem, but gives us a good transparent mechanism in the future... AND it can work with all packets.

Problem is, ALL IGATE authors must implement it... I even chose the leading FORMAT identifier character, but darned if I can find the message now ... :-(

de WB4APR, Bob

On Fri, 9 Jun 2000, Dale Heatherington wrote:

> Hi Bob.
> I've been tinkering with my aprsd server program attempting
> to fix the long standing bug in the dup filter. I think I have that fixed but
> I've notice a slight problem with converted Mic_E packets.
> Currently, following your advice, I have a string ">dsy" in the data
> of the converted packet so the source of conversion can be identified.
>
> The same Mic-E packet could be converted by different software and
> and enter the aprs server system as duplicates but not be detected.
> No big deal but maybe we can do better... I now put "APRS" in the reconstructed ax25 destination
> field. This field is NOT seen by the dup detection code. (path data is ignored) Would this
> be a better place to put a unique identifier such as "APRDSY" or something
> and leave the data part with the ">Mic-E" string so the dup detector
> works properly? All Mic-E packets converted by aprsd would have
> the same (unique to aprsd) ax25 destination string.
>
>
> N1JUX-3>APK002,K1YGF*,WIDE:@092315z4304.21N/07045.25W>000/000/Mic-E/M2/In Service>]
> N1JUX-3>APRS,K1YGF*,WIDE:@092315z4304.23N/07045.26W>000/000/E>dsy/M2/In Service]
>
> These are almost dups. They came in back to back in the data stream. The time
> stamp is the same. The second one was processed by aprsd. The first wasn't.
> I wonder which one is correct?
>
> I notice in the aprsd Mic-E converter code a variable "etype" can be "E" or "T" producing
> T>dsy or E>dsy. This doesn't seem to be an option in the first example above. Not being
> familar with the nuts and bolts of mic-e I don't know what to make of this.
>
>
> --
> Dale Heatherington
> dale@wa4dsy.net
> Web Page <http://www.wa4dsy.net>
> Sent by KMail for Linux
>
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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2. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapr.org>
Date: Fri, 9 Jun 2000 22:51:52 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-89897-2000.06.09-22.55.07--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/9/00 7:30 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

>
>I'm glad you asked. You are in the drivers seat now, so since we never
>could get all the authors to agree to a standard format,
>I now agree with Brent. We should convert ALL mic-E packets to base 64
>transparently.
>
>I propose that we choose a new unused FORMAT character. That signals ALL
>software everywhere that EVERYTHING that follows in that packet is BASE64.
>It is then back converted to ORIGINAL form at the other end. Not only
>does this solve the Mic-E problem, but gives us a good transparent
>mechanism in the future... AND it can work with all packets.
>
>Problem is, ALL IGATE authors must implement it... I even chose the
>leading FORMAT identifier character, but darned if I can find the message
>now ... :-(
>
I do not feel we should use one of the last remaining characters for
this. There simply is no need, all the data can be converted to other
standard formats.

Steve K4HG

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3. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: "Dale Huguley" <kg5qd@worldnet.att.net>
Date: Sat, 10 Jun 2000 11:43:06 -0000
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-89940-2000.06.10-06.48.52--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

HI All-

Steve Dimse said:

>I do not feel we should use one of the last remaining characters for
>this. There simply is no need, all the data can be converted to other
>standard formats.
>
If it is any help- the "." (period) was reserved for automatic space wx
packets- I ended up putting space wx in with the rest of the wx stuff. So I
don't need it.

73 de kg5qd Dale

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4. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sat, 10 Jun 2000 07:05:29 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-89963-2000.06.10-09.08.36--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> On 6/9/00 7:30 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:
>
> >
> >I'm glad you asked. You are in the drivers seat now, so since we never
> >could get all the authors to agree to a standard format,

```

> >I now agree with Brent. We should convert ALL mic-E packets to base 64
> >transparently.
> >
> >I propose that we choose a new unused FORMAT character. That signals ALL
> >software everywhere that EVERYTHING that follows in that packet is BASE64.
> >It is then back converted to ORIGINAL form at the other end. Not only
> >does this solve the Mic-E problem, but gives us a good transparent
> >mechanism in the future... And it can work with all packets.
> >
> >Problem is, ALL IGATE authors must implement it... I even chose the
> >leading FORMAT identifier character, but darned if I can find the message
> >now ... :-(
> >
> I do not feel we should use one of the last remaining characters for
> this. There simply is no need, all the data can be converted to other
> standard formats.
>
> Steve K4HG

```

There are a number of characters still available. And there are a number of simple solutions if we are about to run out. The main problem is APRServe and Mic-E at this time. And there are as many ways that Mic-E data is converted as there are programs. Currently, APRSd is munging Mic-E data sending positions all over the world. Also, since there are several different conversions, APRServe/APRSd do not see them as duplicates and passes them on. If the packet was encoded, it might not fix the dupe problem, but in the end each client program will see the original Mic-E packet.

Brent KH2Z

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5. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Bob Bruninga <bruninga@nadn.navy.mil>
 Date: Sat, 10 Jun 2000 10:06:28 -0400 (EDT)
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
 Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
 Message-ID: <LYR11589-89964-2000.06.10-09.10.07--lyris.aprsspec#tapr.org@lists.tapr.org>
 Rendered body type: text/plain

COncerning converting Mic-E formats for IGate transport Bob wrote:

```

> >I now agree with Brent. We should convert ALL mic-E packets to base 64
> >transparently.
> >
> >I propose that we choose a new unused FORMAT character. That signals ALL
> >software everywhere that EVERYTHING that follows in that packet is BASE64.

```

STEVE SAID:

```

> I do not feel we should use one of the last remaining characters for
> this. There simply is no need, all the data can be converted to other
> standard formats.

```

That is exactly the current problem steve!

You wont agree to a "standard" format. So everyone does it diffeerntly, so there is nothing to consistently check for DUPLICATE or LOOPED packets. Its a total mess. If the PACKET that I get here, can be ANY of 6 different formats depending TOTALLY on who's Igate software converted it to HIS perferred "standard" format, then we have a KLUDGE of monstrous proportions.

EVEN the RF recepiant software at the other end will not recognize the DUPES coming in from multiple IGates. They will ALL LOOK DIFFERENT, yet it was the SAME original MIC-E packet at the source. THIS is CRAZY!

- 1) We need a transparent way to transport Binary packets.
- 2) It should not be restricted to Mic-E packets only
- 3) We should use a common format such as BASE-64
- 4) and EVERY IGATE shuold do it the same way.

de WB4APR, Bob

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6. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapir.org>
Date: Sat, 10 Jun 2000 09:20:01 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-89966-2000.06.10-09.23.23--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

On 6/10/00 9:05 AM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

>There are a number of characters still available. And there are a number
>of simple solutions if we are about to run out. The main problem is
>APRServe and Mic-E at this time. And there are as many ways that Mic-E
>data is converted as there are programs. Currently, APRSd is munging
>Mic-E data sending positions all over the world. Also, since there are
>several different conversions, APRServe/APRSd do not see them as
>duplicates and passes them on. If the packet was encoded, it might not
>fix the dupe problem, but in the end each client program will see the
>original Mic-E packet.
>

First of all, you guys forget there are a half-dozen IGates that are
stupid. Bob's is one. It is just a serial port, and can never convert
anything. So any attempt to produce a software solution that "EVERY
IGATE" (emphasis Bob's, and quite ironic at that) must implement is
doomed.

The majority of the dup problem is caused by the combination of TSB
sending both the original Mic-E packet and the converted one, they have
been promising to fix it for some time. If something is broken in the
aprsd conversion, fix it, that's the point of open source!

This is way over-engineering the problem...

Steve K4HG

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7. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sat, 10 Jun 2000 10:26:18 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-89967-2000.06.10-09.29.24--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

On Sat, 10 Jun 2000, Brent Hildebrand wrote:

munging Mic-E data sending positions all over the world. Also, since
there are several different conversions, APRServe/APRSd do not see them
as duplicates and passes them on. If the packet was encoded, it might
not fix the dupe problem, but in the end each client program will see the
original Mic-E packet.

If all IGates do the same conversion to base64 the same way, then the
converted packets would all look alike too and thus the dupe filter would
get them too.

When a packet is converted, the original then is destroyed and not
injected into APRSd...

bob

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8. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sat, 10 Jun 2000 10:35:55 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-89969-2000.06.10-09.39.34--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

On Sat, 10 Jun 2000, Steve Dimse wrote:

> First of all, you guys forget there are a half-dozen IGates that are
> stupid. Bob's is one. It is just a serial port, and can never convert
> anything. So any attempt to produce a software solution that "EVERY
> IGATE" (emphasis Bob's, and quite ironic at that) must implement is
> doomed.

First of all, I thought mine died over a year ago? I never looked at it since. It is still on line, then this is good news!

Second, if we will agree on a conversion, I would immediately put in a PC to do the conversion..

> The majority of the dup problem is caused by the combination of TSB
> sending both the original Mic-E packet and the converted one, they have
> been promising to fix it for some time. If something is broken in the
> aprsd conversion, fix it, that's the point of open source!

But then you still have 3 or more other different conversions going on. And EVERYON's software EVERYWHERE is now then required to recognize these and any new ones that new authors choose. It is a forever nightmare until we standardize on one conversion.

> This is way over-engineering the problem...

Huh? Good engineering would agree on one standard, and not keep bandaiding such a mess...

de WB4APR, Bob

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9. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapr.org>
Date: Sat, 10 Jun 2000 11:07:27 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-89971-2000.06.10-10.10.32--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/10/00 10:35 AM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

>> First of all, you guys forget there are a half-dozen IGates that are
>> stupid. Bob's is one. It is just a serial port, and can never convert
>> anything. So any attempt to produce a software solution that "EVERY
>> IGATE" (emphasis Bob's, and quite ironic at that) must implement is
>> doomed.
>

>First of all, I thought mine died over a year ago? I never looked at it
>since. It is still on line, then this is good news!
>

I dunno, I haven't been looking at what the network is doing...

>Second, if we will agree on a conversion, I would immediately put in a PC
>to do the conversion..
>

There are 4 or 5 others, are you willing to provide them all with PC's, power, software, and support?

>> The majority of the dup problem is caused by the combination of TSB
>> sending both the original Mic-E packet and the converted one, they have
>> been promising to fix it for some time. If something is broken in the
>> aprsd conversion, fix it, that's the point of open source!
>

>But then you still have 3 or more other different conversions going on.
>And EVERYON's software EVERYWHERE is now then required to recognize these
>and any new ones that new authors choose. It is a forever nightmare
>until we standardize on one conversion.
>

The differences in the way that the different programs convert the packets are minor, compared to other messes in the protocol this one is pretty small-time.

>> This is way over-engineering the problem...

>
>Huh? Good engineering would agree on one standard, and not keep
>bandaiding such a mess...
>
Surely I am not the only one who appreciates the irony of Bob making this
statement ;-)

Steve K4HG

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10. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Bill Diaz <billdiaz@megsinet.net>
Date: Sat, 10 Jun 2000 11:04:29 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-89986-2000.06.10-11.07.55--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve,

Could you offer some constructive suggestions to solve the problem? You indicate that you haven't been looking at what the network has been doing. If you have the time to do so, I think you will soon agree that the Internet feed contains a considerable number of bad, or malformed packets.

This also affects FindU.Com since it is storing these same bad or malformed packets.

If I look at the stations closest to KC9XG-14 with FindU I see calls such as :
WF6FH#14, =4148.03N/,}N9PN0-1,KG9D@
If I look at stations closest to K4HG with FindU I see :W7IUC--11,W7IUC-,Digi

Try <http://www.findu.com/cgi-bin/find.cgi?>*
or
[http://www.findu.com/cgi-bin/find.cgi?="](http://www.findu.com/cgi-bin/find.cgi?=)*
or
[http://www.findu.com/cgi-bin/find.cgi?@"](http://www.findu.com/cgi-bin/find.cgi?@)*

Bill KC9XG

On Saturday, June 10, 2000 10:07 AM, Steve Dimse [SMTP:k4hg@tapr.org] wrote:

> On 6/10/00 10:35 AM Bob Bruninga (bruninga@nadn.navy.mil) wrote:
>
> >> First of all, you guys forget there are a half-dozen IGates that are
> >> stupid. Bob's is one. It is just a serial port, and can never convert
> >> anything. So any attempt to produce a software solution that "EVERY
> >> IGATE" (emphasis Bob's, and quite ironic at that) must implement is
> >> doomed.
> >
> >First of all, I thought mine died over a year ago? I never looked at it
> >since. It is still on line, then this is good news!
> >
> I dunno, I haven't been looking at what the network is doing...
>
> >Second, if we will agree on a conversion, I would immediately put in a PC
> >to do the conversion..
> >
> There are 4 or 5 others, are you willing to provide them all with PC's,
> power, software, and support?
>
> >> The majority of the dup problem is caused by the combination of TSB
> >> sending both the original Mic-E packet and the converted one, they have
> >> been promising to fix it for some time. If something is broken in the
> >> aprsd conversion, fix it, that's the point of open source!
> >
> >But then you still have 3 or more other different conversions going on.
> >And EVERYON's software EVERYWHERE is now then required to recognize these
> >and any new ones that new authors choose. It is a forever nightmare
> >until we standardize on one convesion.
> >
> The differences in the way that the different programs convert the
> packets are minor, compared to other messes in the protocol this one is
> pretty small-time.
>
> >> This is way over-engineering the problem...
> >
> >Huh? Good engineering would agree on one standard, and not keep
> >bandaiding such a mess...

> >
> Surely I am not the only one who appreciates the irony of Bob making this
> statement ;-)
>
> Steve K4HG
>
> ---
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11. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapr.org>
Date: Sat, 10 Jun 2000 13:00:59 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-89996-2000.06.10-12.04.06--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/10/00 12:04 PM Bill Diaz (billdiaz@megsinet.net) wrote:

> Could you offer some constructive suggestions to solve the problem? You
> indicate that you haven't been looking at what the network has been doing.
> If
> you have the time to do so, I think you will soon agree that the Internet
> feed
> contains a considerable number of bad, or malformed packets.
>
> This also affects FindU.Com since it is storing these same bad or malformed
> packets.
>
> If I look at the stations closest to KC9XG-14 with FindU I see calls such
> as :
> WF6FH#14, =4148.03N/,}N9PN0-1,KG9D@
> If I look at stations closest to K4HG with FindU I see :W7IUC--11,W7IUC-,Digi
>
> Try <http://www.findu.com/cgi-bin/find.cgi?>*
> or
> <http://www.findu.com/cgi-bin/find.cgi?>=*
> or
> [@](http://www.findu.com/cgi-bin/find.cgi?)*
>

These have nothing to do with the problem at hand. These are caused by people sending garbage to the internet system. I have heard people complain that the problem is PASSALL, but I do not think so. Most likely some program mangles the data and returns it to the feed. My plate is full, I do not have the time to track this down. Dale has added a new feature to aprsd that shows the source of all packets when connected to a special port. I am supposed to get a copy of this new version in the near future, and once it is up at aprs.net perhaps someone can use it to see where the bad data is coming from. I think I have made it pretty clear I am not accepting responsibility for the internet feed. Tracking stuff like this was taking all my time, and I don't, and won't, do it any longer.

Better detection and removal of these bad packets is another thing high on the list for findu, now that I am a "Master of the Regular Expression", thanks to the Perl Whirl, should be a piece of cake!

Steve K4HG

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12. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sat, 10 Jun 2000 10:40:07 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90008-2000.06.10-12.43.00--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> On 6/10/00 12:04 PM Bill Diaz (billdiaz@megsinet.net) wrote:

>
>> Could you offer some constructive suggestions to solve the problem? You
>> indicate that you haven't been looking at what the network has been doing.
>> If

```

>>you have the time to do so, I think you will soon agree that the Internet
>>feed
>>contains a considerable number of bad, or malformed packets.
>>
>>This also affects FindU.Com since it is storing these same bad or
malformed
>>packets.
>>
>>If I look at the stations closest to KC9XG-14 with FindU I see calls such
>>as :
>>WF6FH#14, =4148.03N/,)N9PN0-1,KG9D@
>>If I look at stations closest to K4HG with FindU I see
:W7IUC--11,W7IUC-,Digi
>>
>>Try http://www.findu.com/cgi-bin/find.cgi?}*
>>or
>>http://www.findu.com/cgi-bin/find.cgi?=*
>>or
>>http://www.findu.com/cgi-bin/find.cgi?@*
>>
>These have nothing to do with the problem at hand. These are caused by
>people sending garbage to the internet system. I have heard people
>complain that the problem is PASSALL, but I do not think so. Most likely
>some program mangles the data and returns it to the feed. My plate is
>full, I do not have the time to track this down. Dale has added a new
>feature to aprsd that shows the source of all packets when connected to a
>special port. I am supposed to get a copy of this new version in the near
>future, and once it is up at aprs.net perhaps someone can use it to see
>where the bad data is coming from. I think I have made it pretty clear I
>am not accepting responsibility for the internet feed. Tracking stuff
>like this was taking all my time, and I don't, and won't, do it any
>longer.
>
>Better detection and removal of these bad packets is another thing high
>on the list for findu, now that I am a "Master of the Regular
>Expression", thanks to the Perl Whirl, should be a piece of cake!
>
>Steve K4HG

```

Here is a simple study of data over the last hour of you type of packet, the @ packet. Notice the mangled data portions of the packet. APRSd is my suspected culprit here with the Mic-E conversion.

```

KI0BW-9>APK101,TCPIP*,N0BKB*:@101nroute... ]"6P}
N5WYE-1>APRS,WD5CWZ-2*,WIDE/1:@101609z3042.1210N/00457.09Wk319/000/E>dsy/M0/
Off duty.. ]"4P}
N7IPB-12>APZ032,WA7TAI-10*,WIDE5-2:@100913z/fy00/V**j /Ken's Mobile Shack.
N7IPB-12>APZ032,WA7TAI-10*,WIDE5-1:@100915z/fy00/V**j /Ken's Mobile Shack.
KI0BW-9>APK101,TCPIP*,N0BKB*:@1016ute... ]"6C}
KESPL>APRS,KESPL-1*,WIDE,K5ELP-2:@081044/B.John in Midland, TX.
G7GFC-7>APRS,RELAY,TRACE:@101632z5310.410N/00251.53W>116/000/E>dsy/M0/Off
duty.. ]"40}TMD700E+GPS3 David
G7GFC-7>APRS,GW7HOH*,TRACE:@101634z5310.410N/00251.53W>116/000/E>dsy/M0/Off
duty.. ]TMD700E+GPS3 David
KI0BW-9>APRS,TCPIP*,N0BKB*:@101638z3812.66N/092ute>/] "6<}Just crusing
G7GFC-7>APRS,GW7HOH*,TRACE:@101642z5310.410N/00251.53W>116/000/E>dsy/M0/Off
duty.. ]TMD700E+GPS3 David
KI0BW-9>APK101,TCPIP*,N0BKB*:@1016te... ]"6N}
KI0BW-9>APRS,TCPIP*,N0BKB*:@10164@101649z3812.65N/09241.29W>033/000/E>dsy/M1
/Enroute... ]"6N}
KI0BW-9>APK101,TCPIP*,N0BKB*:@101nroute... ]"6G}
G7GFC-7>APRS,GW7HOH*,TRACE:@101659z5310.410N/00251.53W>116/000/E>dsy/M0/Off
duty.. ]"44}TMD700E+GPS3 David
K7GPS-9>APRS,K7GPS-10*,WIDE4-3:@101701z4634.610N/12317.79Wv269/000/E>dsy/M2/
In Service ]"5?}
K7GPS-9>APRS,K7GPS-10*,WIDE4-3:@101703z4634.610N/12317.79Wv269/000/E>dsy/M2/
In Service ]"5E}
KI0BW-9>APRS,TCPIP*,N0BKB*:@101709z38e>/] "6I}
KESPL>APRS,KESPL-1*,WIDE,K5ELP-2:@081044/B.John in Midland, TX.
KI0BW-9>APK101,TCPIP*,N0BKB*:@101E>dsy/M1/Enroute... ]"6@}Just crusing
KI0BW-9>APK101,TCPIP*,N0BKB*:@1010/E>dsy/M1/Enroute... ]"6@}Just crusing

```

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13. [aprrspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapr.org>
Date: Sat, 10 Jun 2000 13:59:05 -0400
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-90011-2000.06.10-13.02.19--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/10/00 1:40 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

>Here is a simple study of data over the last hour of you type of packet, the
>@ packet. Notice the mangled data portions of the packet. APRSd is my
>suspected culprit here with the Mic-E conversion.
>

Hard to place the blame on aprsd, as weather packets, messages, and other things get mangled as well. For example, the W7IUC--11 Bill mentions is a stand-alone weather station beaconing a ! position, not a Mic-E packet.

W7IUC--11>RS,WIDE,WIDE,KD4BBM-6*/V:!2440.16N/08121.63W_Big Pine Key FL -WX

Here's a message packet:

H5!.0-15>WIDE,0N58_N,WB4%PH-5,NOT[I-8,Y@M,&N-4*-11,41X#-8KF4FFN,APR823,W2GF
F-7,KU4LY-7*:WA4MTG :hello there{0

Something else is going on...

Steve K4HG

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14. [aprrspec] Re: Mic-E converters and duplicate packet detection

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sat, 10 Jun 2000 18:42:57 -0400 (EDT)
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-90052-2000.06.10-17.46.37--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Sat, 10 Jun 2000, Steve Dimse wrote:

> >> The majority of the dup problem is caused by the combination of TSB
> >> sending both the original Mic-E packet and the converted one, they have
> >> been promising to fix it for some time. If something is broken in the
> >> aprsd conversion, fix it, that's the point of open source!
> >

> >But then you still have 3 or more other different conversions going on.
> >[and still no standard for the next problem that comes up...]

> The differences in the way that the different programs convert the
> packets are minor, compared to other messes in the protocol this one is
> pretty small-time.

No matter how minor they are, each and every one of them must be documented, recognized and parsed so that the DUPE ELIMINATOR will work. As it is, none of this is documented nor agreed, since you insisted that APRServe processing not be included in the APRS SPEC. I don't write Igate code, but if you asked me which I would rather do:

- 1) Do dupe checking on any number of conversions, none adhering to any kind of spec that I would have to figure out on my own and modify every time someone changed theirs or a bug was found...

OR

- 2) Agree to one base-64 universal/transparent conversion that would handle all present and future binary packets

I know which one I would choose...

de WB4APR, Bob

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15. [aprrspec] Re: Mic-E converters and duplicate packet detection

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sat, 10 Jun 2000 17:09:20 -0700
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-90065-2000.06.10-19.12.33--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was looking at a single packet type. Not all. Just trying to figure out what is happening. I suspect more than one. But APRSd is mangling some Mic-E packets. I think that is clear.

Brent

----- Original Message -----

From: Steve Dimse <k4hg@tapr.org>
To: Brent Hildebrand <bhildebrand@earthlink.net>; APRS Spec Discussion List <aprrspec@lists.tapr.org>
Sent: Saturday, June 10, 2000 10:59 AM
Subject: Re: [aprrspec] Re: Mic-E converters and duplicate packet detection

> On 6/10/00 1:40 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:
>
> >Here is a simple study of data over the last hour of you type of packet, the
> >@ packet. Notice the mangled data portions of the packet. APRSd is my
> >suspected culprit here with the Mic-E conversion.
> >
> Hard to place the blame on aprsd, as weather packets, messages, and other
> things get mangled as well. For example, the W7IUC--11 Bill mentions is a
> stand-alone weather station beaconing a ! position, not a Mic-E packet.
>
> W7IUC--11>RS,WIDE,WIDE,KD4BBM-6*/V:!2440.16N/08121.63W_Big Pine Key FL -WX
>
> Here's a message packet:
>
> H5!.0-15>WIDE,0N58_N,WB4%PH-5,NOT[I-8,Y@M,&N-4*-11,41X#-8KF4FFN,APR823,W2GF
> F-7,KU4LY-7*::WA4MTG :hello there{0
>
> Something else is going on...
>
> Steve K4HG

I was looking at a single packet type. Not all. Just trying to figure out what is happening. I suspect more than one. But APRSd is mangling some Mic-E packets. I think that is clear.

Brent

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16. [aprrspec] Re: Mic-E converters and duplicate packet detection

From: Ian Wade <Ian.Wade@care4free.net>
Date: Sun, 11 Jun 2000 07:15:19 +0100
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-90127-2000.06.11-01.56.10--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In article <LYR14779-90008-2000.06.10-12.43.00--Ian.Wade#care4free.net@lists.tapr.org>, Brent Hildebrand <bhildebrand@earthlink.net> writes

>
>Here is a simple study of data over the last hour of you type of packet, the
> >@ packet. Notice the mangled data portions of the packet. APRSd is my
> >suspected culprit here with the Mic-E conversion.
> >
> >KI0BW-9>APK101,TCPIP*,N0BKB*:@101nroute...]"6P}

[snip the rest of the packets]

Here is the APRdec output for these packets, with some additional comments:

~~~~~

```
=====
<<<< APRSdec >>>> The G3NRW APRS Packet Decoder
=====
Version 1.0.2c (8 June 2000)
by Ian Wade, G3NRW (g3nrw@arrl.net)
```

```
Input file   = brent.log
Output file  = brent.out
DOS Runtime  = 11 Jun 2000  6:26:34.76
```

NOTE: If this report contains anything that you think is incorrect,  
please email it to g3nrw@arrl.net for investigation. Thank you.

```
-----
Record #1
KI0BW-9>APK101,TCPIP*,N0BKB*:@101nroute... ]"6P}
APRS Data Type= Posit w/ time. With APRS
**BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
Long= **BAD LONG >180deg
**BAD COURSE
Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)
GPS Fix= Old (last) NMEA Source= RMC Compression Origin= Digipeater conversion
Icon= **BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER
```

```
-----
Record #2
N5WYE-1>APRS,WD5CWZ-2*,WIDE/1:@101609z3042.1210N/00457.09Wk319/000/E>dsy/M0/Off duty.. ]"4P}
APRS Data Type= Posit w/ time. With APRS
Day= 10 Time= 16 hours 09 mins UTC
Lat= **BAD LAT Long= **BAD LONG
Icon= **INVALID ICON Overlay= **BAD OVERLAY CHAR '0' not allowed with this symbol
Altitude= 187 feet (57 meters)
```

[\*\*\*COMMENT: In this and later reports, one or more extraneous digits  
appear in the latitude hundredths, just before the "N"].

```
-----
Record #3
N7IPB-12>APZ032,WA7TAI-10*,WIDE5-2:@100913z/fy00/V**j /Ken's Mobile Shack.
APRS Data Type= Posit w/ time. With APRS
Day= 10 Time= 09 hours 13 mins UTC
Lat= 48 deg 24.99 min S Long= 122 deg 18.00 min W
Icon= Jeep Overlay= (none)
```

[\*\*\*COMMENT: Is there anything wrong with this report and the next one? They  
both appear to contain valid 13-character compressed posits].

```
-----
Record #4
N7IPB-12>APZ032,WA7TAI-10*,WIDE5-1:@100915z/fy00/V**j /Ken's Mobile Shack.
APRS Data Type= Posit w/ time. With APRS
Day= 10 Time= 09 hours 15 mins UTC
Lat= 48 deg 24.99 min S Long= 122 deg 18.00 min W
Icon= Jeep Overlay= (none)
```

[\*\*\*COMMENT: Apparently nothing wrong with this. See above].

```
-----
Record #5
KI0BW-9>APK101,TCPIP*,N0BKB*:@1016ute... ]"6C}
APRS Data Type= Posit w/ time. With APRS
**BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
Lat= 64 deg 00.00 min N Long= 175 deg 06.82 min W
**BAD COURSE
Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)
GPS Fix= Old (last) NMEA Source= RMC Compression Origin= Digipeater conversion
Icon= **BAD SYMBOL CODE
**BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER
```

```
-----
Record #6
KE5PL>APRS,KE5PL-1*,WIDE,K5ELP-2:@081044/B.John in Midland, TX.
APRS Data Type= Posit w/ time. With APRS
Day= 08 Time= 10 hours 44 mins Local
```



Lat= 63 deg 22.34 min N Long= 124 deg 38.61 min E  
Course= 176 deg Speed= 254 knots (292.3 mph 470.4 kph 130.7 m/s)  
\*\*BAD T-BYTE 'd'  
Icon= (No Icon) Overlay= \*\*BAD OVERLAY CHAR 'B' not allowed with this symbol

[\*\*\*COMMENT: The comment text was decoded as a compressed posit. The posit is actually missing. Question: are there any other reports like this, where the actual posit is completely missing? If so, it could be that they contained \*compressed\* posits which the conversion program didn't know what to do with. Just a hunch].

-----  
Record #7  
G7GFC-7>APRS,RELAY,TRACE:@101632z5310.410N/00251.53W>116/000/E>dsy/M0/Offduty.. ]"40}TMD700E+GPS3 David  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 16 hours 32 mins UTC  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= NWS Site Overlay= N  
Altitude= 82 feet (25 meters)

[\*\*\*COMMENT: Extraneous latitude "0" digit before the "N". I have seen this many times before].

-----  
Record #8  
G7GFC-7>APRS,GW7H0H\*,TRACE:@101634z5310.410N/00251.53W>116/000/E>dsy/M0/Offduty.. ]TMD700E+GPS3 David  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 16 hours 34 mins UTC  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= NWS Site Overlay= N

[\*\*\*COMMENT: Extraneous latitude "0" digit before the "N"].

-----  
Record #9  
KI0BW-9>APRS,TCPIP\*,N0BKB\*:@101638z3812.66N/092ute>/] "6<} Just crusing  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 16 hours 38 mins UTC  
Lat= 38 deg 12.66 min N Long= \*\*BAD LONG  
Icon= \*\*INVALID ICON Overlay= (none)  
Altitude= 1859035 feet (566634 meters)

[\*\*\*COMMENT: Just \*what\* is he "crusing" in at that altitude, 352 miles up in the sky .....].

-----  
Record #10  
G7GFC-7>APRS,GW7H0H\*,TRACE:@101642z5310.410N/00251.53W>116/000/E>dsy/M0/Offduty.. ]TMD700E+GPS3 David  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 16 hours 42 mins UTC  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= NWS Site Overlay= N

[\*\*\*COMMENT: Extraneous latitude "0" digit before the "N"].

-----  
Record #11  
KI0BW-9>APK101,TCPIP\*,N0BKB\*:@1016te... ]"6N}  
APRS Data Type= Posit w/ time. With APRS  
\*\*BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.  
Lat= 64 deg 17.40 min N Long= 94 deg 54.76 min W  
\*\*BAD COURSE  
Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)  
GPS Fix= Old (last) MMEA Source= RMC Compression Origin= Digipeater conversion  
Icon= \*\*BAD SYMBOL CODE  
\*\*BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER

-----  
Record #12

KI0BW-9>APRS,TCPIP\*,N0BKB\*:@10164@101649z3812.65N/09241.29W>033/000/E>dsy/M1/Enroute... ]"6N}  
APRS Data Type= Posit w/ time. With APRS  
\*\*BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= \*\*INVALID ICON Overlay= \*\*BAD OVERLAY CHAR '1' not allowed with this symbol  
Altitude= 778 feet (237 meters)

[\*\*\*COMMENT: Here the timestamp is apparently repeated, sort of].

-----  
Record #13

KI0BW-9>APK101,TCPIP\*,N0BKB\*:@101nroute... ]"6G}  
APRS Data Type= Posit w/ time. With APRS  
\*\*BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.  
Long= \*\*BAD LONG >180deg  
\*\*BAD COURSE  
Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)  
GPS Fix= Old (last) NMEA Source= RMC Compression Origin= Digipeater conversion  
Icon= \*\*BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER

-----  
Record #14

G7GFC-7>APRS,GW7H0H\*,TRACE:@101659z5310.410N/00251.53W>116/000/E>dsy/M0/Offduty..  
]"44}TMD700E+GPS3 David  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 16 hours 59 mins UTC  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= NWS Site Overlay= N  
Altitude= 95 feet (29 meters)

[\*\*\*COMMENT: Extraneous latitude "0" digit before the "N"].

-----  
Record #15

K7GPS-9>APRS,K7GPS-10\*,WIDE4-3:@101701z4634.610N/12317.79Wv269/000/E>dsy/M2/In Service ]"5?}  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 17 hours 01 mins UTC  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= NWS Site Overlay= N  
Altitude= 430 feet (131 meters)

[\*\*\*COMMENT: Extraneous latitude "0" digit before the "N"].

-----  
Record #16

K7GPS-9>APRS,K7GPS-10\*,WIDE4-3:@101703z4634.610N/12317.79Wv269/000/E>dsy/M2/In Service ]"5E}  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 17 hours 03 mins UTC  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= NWS Site Overlay= N  
Altitude= 449 feet (137 meters)

[\*\*\*COMMENT: Extraneous latitude "0" digit before the "N"].

-----  
Record #17

KI0BW-9>APRS,TCPIP\*,N0BKB\*:@101709z38e>/"6I}  
APRS Data Type= Posit w/ time. With APRS  
Day= 10 Time= 17 hours 09 mins UTC  
Lat= \*\*BAD LAT Long= \*\*BAD LONG  
Icon= \*\*BAD SYMBOL CODE  
Overlay= \*\*BAD OVERLAY CHAR 'I' not allowed with this symbol

[\*\*COMMENT: This non-Mic-E report contains a vestige of a Mic-E encoded posit].

-----  
Record #18

KE5PL>APRS,KE5PL-1\*,WIDE,K5ELP-2:@081044/B.John in Midland, TX.  
APRS Data Type= Posit w/ time. With APRS  
Day= 08 Time= 10 hours 44 mins Local  
Lat= 63 deg 22.34 min N Long= 124 deg 38.61 min E  
Course= 176 deg Speed= 254 knots (292.3 mph 470.4 kph 130.7 m/s)  
\*\*BAD T-BYTE 'd'  
Icon= (No Icon) Overlay= \*\*BAD OVERLAY CHAR 'B' not allowed with this symbol

[\*\*\*COMMENT: This is identical to Record #6. Why did it show up twice?].

-----  
Record #19

KI0BW-9>APK101,TCPIP\*,N0BKB\*:@101E>dsy/M1/Enroute... ]"6@}Just crusing  
APRS Data Type= Posit w/ time. With APRS  
\*\*BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.  
Lat= 61 deg 20.63 min N Long= 34 deg 10.69 min W  
Course= 332 deg Speed= 186 knots (214.0 mph 344.5 kph 95.7 m/s)  
GPS Fix= Old (last) NMEA Source= GLL Compression Origin= Pico  
Icon= \*\*BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER

-----  
Record #20

KI0BW-9>APK101,TCPIP\*,N0BKB\*:@1010/E>dsy/M1/Enroute... ]"6@}Just crusing  
APRS Data Type= Posit w/ time. With APRS  
\*\*BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.  
Lat= 74 deg 08.03 min S Long= 116 deg 04.16 min W  
Course= 312 deg Speed= 641 knots (737.6 mph 1187.1 kph 329.8 m/s)  
\*\*BAD T-BYTE 't'  
Icon= Restrooms Overlay= \*\*BAD OVERLAY CHAR 'd' not allowed with this symbol

+++++ END OF FILE +++++

~~~~~  
[***BOTTOM LINE COMMENT: Most of these reports contain "/E>dsy". Is this
a common factor in the problem. Which program generates "/E>dsy"?].

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

***** Third draft now available *****

--

+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/Faprswg.html> |
| APRS DECODER: <http://www.netro.co.uk/aprs.htm> |
+-----+

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17. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Ian Wade <Ian.Wade@care4free.net>
Date: Sun, 11 Jun 2000 08:36:04 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90132-2000.06.11-02.39.48--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In article <LYR14779-90127-2000.06.11-01.56.10--Ian.Wade#care4free.net@lists.tapr.org>, Ian
Wade <Ian.Wade@care4free.net> writes

>-----
>Record #3
>N7IPB-12>APZ032,WA7TAI-10*,WIDE5-2:@100913z/fy00/V**j /Ken's Mobile Shack.
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 09 hours 13 mins UTC
> Lat= 48 deg 24.99 min S Long= 122 deg 18.00 min W
> Icon= Jeep Overlay= (none)
>
>[***COMMENT: Is there anything wrong with this report and the next one? They
>both appear to contain valid 13-character compressed posits].
>

Yes, on reflection, there probably *is* something wrong here. I don't believe
this guy was 48 deg *south*.

BTW, I have already commented to other stations privately that their reported posits seemed way off. A few days ago, when looking at the world map, I saw a VE in the Atlantic off the SW coast of Ireland, and a K7 in Singapore

This is really serious, and throws the whole APRS concept into question. As Bob/Brent and others have commented elsewhere, we really need a single IGate standard asap.

But before that, we need to find out what is creating this garbage. In particular, what generates "E>dsy"? This seems like a good place to start looking.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

***** Third draft now available *****

--

```
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

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18. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sun, 11 Jun 2000 09:12:40 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90148-2000.06.11-08.15.56--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

There are two lessons here...

On Sun, 11 Jun 2000, Ian Wade wrote:

> BTW, I have already commented to other stations privately that their
> reported posits seemed way off.

1) ALL Software should be doing reasonableness filters on moving stations. Even GPS's sometimes send out erroneous data. I found way back in 94 that I had to check for bad data, and ignore. So APRSdos has always ignored instantaneous jumps on moving stations. I think the SPEC should even recommend this if other authors are not doing it already.

> This is really serious, and throws the whole APRS concept into question. As
> Bob/Brent and others have commented elsewhere, we really need a single
> IGate standard asap.

2) The proposal is that any packet that contains binary info will be converted as follows:

- a) The entire data field of the original is base-64 encoded
- b) The encoded packet begins with a "(" and base-64 follows it.
- c) On receipt of a "(" type packet, the process is reversed.

Brent, can you detail the exact steps in base-64 encoding?

Bob

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19. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Bill Diaz <billdiaz@megsinet.net>
Date: Sun, 11 Jun 2000 09:22:36 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90153-2000.06.11-09.35.15--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob,

On Sunday, June 11, 2000 8:13 AM, Bob Bruninga [SMTP:bruninga@nadn.navy.mil] wrote:

> There are two lessons here...

>

> On Sun, 11 Jun 2000, Ian Wade wrote:

> > BTW, I have already commented to other stations privately that their

> > reported posits seemed way off.

>

> 1) ALL Software should be doing reasonableness filters on moving stations.

> Even GPS's sometimes send out erroneous data. I found way back in 94 that

> I had to check for bad data, and ignore. So APRSdos has always ignored

> instantaneous jumps on moving stations. I think the SPEC should even

> recommend this if other authors are not doing it already.

>

> > This is really serious, and throws the whole APRS concept into question. As

> > Bob/Brent and others have commented elsewhere, we really need a single

> > IGate standard asap.

This standard should include a method to test the ability of IGATEs and applications, to correctly decode MicE and compressed positions. Currently, a single Mic-E packet appears to be decoded differently by the various IGATEs. A standard collection of packets could be developed, and distributed to permit applications to determine if they meet the standard for decoding these packets.

The insertion of timestamps in decoded packets should be addressed as well. If multiple IGATEs decode the same packet it is possible for each to insert a different timestamp. Each of the decoded packets will appear unique to dupe checking code. Perhaps timestamps should be assigned by the end user application rather than the IGATEs?

Some applications append identifiers to the end of converted packets, some convert text to uppercase, and some insert other information. The IGATE standard should specify the exact permitted content, and format of converted packets to ensure that dupes can be detected and eliminated.

Headers may contain extraneous information that could cause some applications to incorrectly parse the packet. The standard should detail what IGATEs can include, and what must be excluded.

>

> 2) The proposal is that any packet that contains binary info will be

> converted as follows:

>

> a) The entire data field of the original is base-64 encoded

> b) The encoded packet begins with a "(" and base-64 follows it.

> c) On receipt of a "(" type packet, the process is reversed.

The proposal should also include provisions to ensure that dupes can be eliminated.

>

> Brent, can you detail the exact steps in base-64 encoding?

>

> Bob

>

>

>

Bill KC9XG

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20. [aprsspec] Re: MIC-E and binary encoding

From: "Jonathan Bradshaw" <Jonathan@NrgUp.Net>

Date: Sun, 11 Jun 2000 16:23:37 +0100

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-90163-2000.06.11-10.26.06--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Since everyone is adding their 2p (sorry, I'm now back in the UK and I think I have to add 17.5% VAT to 2p but anyway...)

Its unfortunate that the MIC-E format uses non-printable characters but since it can't be changed either applications should be 8-bit compliant or base-conversion needs to be done so the original data can be

returned. I really hope that the future APRS protocol versions start to limit the large number of formats that exist (yes, I know it can't even be talked about until the current version documentation is final).

Are there any TCP servers right now that can't handle 8-bit streams? Could we just look at not converting these packets and letting them go through as intended? APRSD should handle 8-bit just fine and any program that listens to the TNC data stream needs to handle 8-bit anyway to decode those packets.

One day I'll actually get my java igate finished so I can put my money where my mouth is... ;-)

G/N90XE

ÿÿ0çæ«yÊ«-éí0+.nç+0·0¶000Ê)yÆ-þ\«0İÚ!»,¥çÿµªkp0àN0§²æir,0zÇ\$u!âjy0"¥¶0^j÷ÿj0i²00ÿjyóóÿ0+-³ûz!zè

21. [aprrspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapr.org>
Date: Sun, 11 Jun 2000 12:25:24 -0400
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-90171-2000.06.11-11.28.34--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/10/00 8:09 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

>I was looking at a single packet type. Not all. Just trying to figure
>out what is happening. I suspect more then one. But APRSd is mangling
>some Mic-E packets. I think that is clear.
>

I think it is possible that there is a bug in the Mic-E conversion code
in aprsd, but I really do not think it is doing the packet mangling being
discussed here.

Steve K4HG

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22. [aprrspec] Re: Mic-E converters and duplicate packet detection

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sun, 11 Jun 2000 09:43:12 -0700
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-90182-2000.06.11-11.46.28--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The packets I posted were the Mic-E Conversion packets. That is what I was discussing. Yes, there are other problems. Probably not a single solution. But when I monitor the APRServe/APRSd data stream, some stations just all over the place. and ">dsy" is very prominent in there packets. The obvious mangled NMEA data with dropped or extra characters are easy. Throw them out. The @ packets with incorrect number of digits for Lat or Long are easy, throw them out. But the mis-converted Mic-E data looks like real data. Fix the source. That is what I was saying.

Brent

> On 6/10/00 8:09 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:
>

> >I was looking at a single packet type. Not all. Just trying to figure
> >out what is happening. I suspect more then one. But APRSd is mangling
> >some Mic-E packets. I think that is clear.
> >

> I think it is possible that there is a bug in the Mic-E conversion code
> in aprsd, but I really do not think it is doing the packet mangling being
> discussed here.

>
> Steve K4HG

>

> ---

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> To unsubscribe send a blank email to leave-aprrspec-11589P@lists.tapr.org
>
>

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23. [aprrspec] Re: MIC-E and binary encoding

From: Steve Dimse <k4hg@tapr.org>
Date: Sun, 11 Jun 2000 12:44:56 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90185-2000.06.11-11.48.26--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/11/00 11:23 AM Jonathan Bradshaw (Jonathan@NrgUp.Net) wrote:

>Its unfortunate that the MIC-E format uses non-printable characters but
>since it can't be changed either applications should be 8-bit compliant or
>base-conversion needs to be done so the original data can be returned. I
>really hope that the future APRS protocol versions start to limit the
>large number of formats that exist (yes, I know it can't even be talked
>about until the current version documentation is final).
>

>Are there any TCP servers right now that can't handle 8-bit streams? Could
>we just look at not converting these packets and letting them go through
>as intended? APRSD should handle 8-bit just fine and any program that
>listens to the TNC data stream needs to handle 8-bit anyway to decode
>those packets.
>

First, the problem is not "8 bit", but rather the non-printing
characters. No line oriented protocol can handle all NPC's transparently,
CR or LF always has special meaning. Other NPCs also carry meaning, and
so may be filtered out.

When I was working on the problem in the past, I wrote a short program to
send these npc's as part of an APRS packet to the server, and they did
not get filtered out. However, somewhere along the path they do get
filtered. Unless someone wants to spend some time digging into the
details to find out exactly where the problem is, letting them pass is
not a solution.

Steve K4HG
Steve K4HG

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24. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapr.org>
Date: Sun, 11 Jun 2000 12:48:04 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90190-2000.06.11-11.51.11--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/11/00 12:43 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

>The packets I posted were the Mic-E Conversion packets. That is what I
>was discussing. Yes, there are other problems. Probably not a single
>solution. But when I monitor the APRServe/APRSD data stream, some
>stations just all over the place. and ">dsy" is very prominent in there
>packets. The obvious mangled NMEA data with dropped or extra characters
>are easy. Throw them out. The @ packets with incorrect number of digits
>for Lat or Long are easy, throw them out. But the mis-converted Mic-E
>data looks like real data. Fix the source. That is what I was saying.
>

So since aprsd is open source, why doesn't someone fix it?

Steve K4HG

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25. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Steve Dimse <k4hg@tapr.org>
Date: Sun, 11 Jun 2000 13:00:00 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90193-2000.06.11-12.03.13--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/10/00 6:42 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

>No matter how minor they are, each and every one of them must be
>documented, recognized and parsed so that the DUPE ELIMINATOR will work.
>As it is, none of this is documented nor agreed, since you insisted that
>APRServe processing not be included in the APRS SPEC.

What I said was it should not be included in that spec, but rather in a separate document. Unfortunately the first one took so much out of everyone that there seems to be little interest in starting another.

```
>I dont write Igate
>code, but if you asked me which I would rather do:
>
> 1) Do dupe checking on any number of conversions, none adhereing to
> any kind of spec that I would have to figure out on my own and
> modify every time someone changed theirs or a bug was found...
>
>OR
>
> 2) Agree to one base-64 universal/transparent conversion that would
> handle all present and future binary packets
>
>I know which one I would choose...
```

There are a few easily fixed problems. First, TSB need to stop sending both the converted packet and the original. This will greatly reduce, if not eliminate the number of Mic-E packets aprsd sees and converts. In turn, this means a whole lot less possibilities for seeing dups.

Second, someone can look at the Mic-E conversion code in aprsd, find out if there really is a bug, and fix it.

Third, if there still are enough dups to worry about (and should only happen when an area is served by multiple IGates of different types) then standardization of the converted packet could be done.

This is not something that I think calls for a new packet type.

Steve K4HG

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26. [aprsspec] Re: MIC-E and binary encoding

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sun, 11 Jun 2000 10:04:06 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Private Discussion" <aprsdev@lists.tapr.org>
Message-ID: <LYR11589-90195-2000.06.11-12.07.22--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
> On 6/11/00 11:23 AM Jonathan Bradshaw (Jonathan@NrgUp.Net) wrote:
>
> >Its unfortunate that the MIC-E format uses non-printable characters but
> >since it can't be changed either applications should be 8-bit compliant or
> >base-conversion needs to be done so the original data can be returned. I
> >really hope that the future APRS protocol versions start to limit the
> >large number of formats that exist (yes, I know it can't even be talked
> >about until the current version documentation is final).
> >
> >Are there any TCP servers right now that can't handle 8-bit streams? Could
> >we just look at not converting these packets and letting them go through
> >as intended? APRSD should handle 8-bit just fine and any program that
> >listens to the TNC data stream needs to handle 8-bit anyway to decode
> >those packets.
> >
> First, the problem is not "8 bit", but rather the non-printing
> characters. No line oriented protocol can handle all NPC's transparently,
> CR or LF always has special meaning. Other NPCs also carry meaning, and
> so may be filtered out.
>
> When I was working on the problem in the past, I wrote a short program to
> send these npc's as part of an APRS packet to the server, and they did
> not get filtered out. However, somewhere along the path they do get
> filtered. Unless someone wants to spend some time digging into the
> details to find out exactly where the problem is, letting them pass is
> not a solution.
>
> Steve K4HG
> Steve K4HG
```


Actually, it would be quite simple to create a line oriented protocol that handled all NPCs. Just like AX.25, Garmin's GPS protocol, and many other protocols. It requires an "escape" character and a conversion character. Then any data can be passed. Example: If the new line character, <NL> is the packet end delimiter, and the "escape" character is @, and the conversion character for <NL> was 1, then anytime a <NL> character was encountered, it would be converted to @1, except at the end of a packet where the <NL> signalled the end of the packet. The escape character is self is encoded, might just be is self doubled. All NPCs would then be encoded in this way. The overhead is actually quite minimal, and all characters that go in, come out as they when it. Completely transparent.

Brent KH2Z

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27. [aprsspec] Re: MIC-E and binary encoding

From: Steve Dimse <k4hg@tapr.org>
Date: Sun, 11 Jun 2000 13:07:26 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Private Discussion" <aprsdev@lists.tapr.org>
Message-ID: <LYR11589-90200-2000.06.11-12.10.43--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 6/11/00 1:04 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

>Actually, it would be quite simple to create a line oriented protocol that
>handled all NPCs. Just like AX.25, Garmin's GPS protocol, and many other
>protocols. It requires an "escape" character and a conversion character.
>Then any data can be passed. Example: If the new line character, <NL> is
>the packet end delimiter, and the "escape" character is @, and the
>conversion character for <NL> was 1, then anytime a <NL> character was
>encountered, it would be converted to @1, except at the end of a packet
>where the <NL> signalled the end of the packet. The escape character is
>self is encoded, might just be is self doubled. All NPCs would then be
>encoded in this way. The overhead is actually quite minimal, and all
>characters that go in, come out as they when it. Completely transparent.
>

By transparent I meant one that didn't require escape codes. TNC's use
ctrl-v as the escape code by default.

Steve K4HG

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28. [aprsspec] Re: MIC-E and binary encoding

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sun, 11 Jun 2000 12:55:41 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Private Discussion" <aprsdev@lists.tapr.org>
Message-ID: <LYR11589-90225-2000.06.11-14.59.00--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> On 6/11/00 1:04 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

>

> >Actually, it would be quite simple to create a line oriented protocol that
> >handled all NPCs. Just like AX.25, Garmin's GPS protocol, and many other
> >protocols. It requires an "escape" character and a conversion character.
> >Then any data can be passed. Example: If the new line character, <NL> is
> >the packet end delimiter, and the "escape" character is @, and the
> >conversion character for <NL> was 1, then anytime a <NL> character was
> >encountered, it would be converted to @1, except at the end of a packet
> >where the <NL> signalled the end of the packet. The escape character is
> >self is encoded, might just be is self doubled. All NPCs would then be
> >encoded in this way. The overhead is actually quite minimal, and all
> >characters that go in, come out as they when it. Completely transparent.
> >

> By transparent I meant one that didn't require escape codes. TNC's use
> ctrl-v as the escape code by default.

>

> Steve K4HG

By transparent I mean what you put in one side, you get exactly the same thing out the other. Ctrl-V
does not apply to KISS mode. KISS mode does not need it.

Brent

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29. [aprsspec] aprsd dev page

From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>
Date: Sun, 11 Jun 2000 17:52:46 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90248-2000.06.11-16.57.23--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi to all, (and sorry for cross posting)

Some of you may now that I intend help/continue what Dale began with aprsd.

I've now put up a web page for my project. It is done under the supervision of a class that I will take this fall, but the developement has already began.

You'll find all the information you need on the page, or else, please send me an email and the info will be added. Appreciate any comments good/bad, anything....

here is the site : <http://ve2.ele.etsmtl.ca/projets/aprs.html>

Thanks for your attention.

--

Bruno Quesnel	va2bmg@videotron.ca
Genie Electrique	quesnelb@ve2.ele.etsmtl.ca
Electrical Engineering	queb1604@ele.etsmtl.ca
Ecole de Technologies Superieure	VA2 BMG

30. [aprsspec] MAYDAY supported?

From: "Richard Carter" <rich.carter@windriver.com>
Date: Mon, 12 Jun 2000 11:59:22 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90475-2000.06.12-11.02.46--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I've been looking through the spec and other assocaited documentation that I have, and have found no way to issue a mayday or panpan call using APRS. It seems that the receivers will filter out messages unless they are addressed for the specific recipient. Have I missed something here?

Rich - KE1EV

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31. [aprsspec] Re: MAYDAY supported?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 12 Jun 2000 12:42:13 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90491-2000.06.12-11.46.02--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Mon, 12 Jun 2000, Richard Carter wrote:

> I've been looking through the spec and other assocaited documentation that I
> have, and have found no way to issue a mayday or panpan call using APRS. It
> seems that the receivers will filter out messages unless they are addressed
> for the specific recipient. Have I missed something here?

That's what BULLETINS are for. They go to everyone.

Send TO: BLN1
MSG: HELP!, Sinking in Pax RIver...

And everyone will be alerted. If it is a kenwood, or a Mic-E, then jsut welect the EMERGENCY button...

de WB4APR< Bob

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32. [aprsspec] Re: MAYDAY supported?

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Mon, 12 Jun 2000 10:02:51 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90493-2000.06.12-12.05.49--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> On Mon, 12 Jun 2000, Richard Carter wrote:
>
> > I've been looking through the spec and other associated documentation
that I
> > have, and have found no way to issue a mayday or panpan call using APRS.
It
> > seems that the receivers will filter out messages unless they are
addressed
> > for the specific recipient. Have I missed something here?
>
> That's what BULLETINS are for. They go to everyone.
>
> Send TO: BLN1
> MSG: HELP!, Sinking in Pax River...
>
> And everyone will be alerted. If it is a kenwood, or a Mic-E, then jsut
> welect the EMERGENCY button...
>
> de WB4APR< Bob

But bulletins do not have the same force as the Mic-E alarm function. I
would propose a simple addition where if you sent a message TO EMERGENCY, it
would trigger the same alarms as a Mic-E alarm.

Brent

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33. [aprsspec] Re: MAYDAY supported?

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 12 Jun 2000 15:59:39 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90535-2000.06.12-15.03.09--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Mon, 12 Jun 2000, Brent Hildebrand wrote:

> But bulletins do not have the same force as the Mic-E alarm function. I
> would propose a simple addition where if you sent a message TO EMERGENCY, it
> would trigger the same alarms as a Mic-E alarm.

I agree. Unless someone objects, I see no reason why we cannot do so.
Of course, people will want to TEST this capability.... Should we also
declare, that an EMERGENCY message with the first word of "TEST" should be
ignored by all operators even though the alarms will still occur.

Clearly these will be nuisances, but it is nice to have a plan...?

Bob

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34. [aprsspec] Re: MAYDAY supported?

From: David VanHorn <dvanhorn@cedar.net>
Date: Mon, 12 Jun 2000 15:18:24 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90545-2000.06.12-15.22.48--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>I agree. Unless someone objects, I see no reason why we cannot do so.
>Of course, people will want to TEST this capability.... Should we also
>declare, that an EMERGENCY message with the first word of "TEST" should be
>ignored by all operators even though the alarms will still occur.
>
>Clearly these will be nuisances, but it is nice to have a plan...?

There really should be a test functionality.
pls don't implement like my SAME radio.. the screeching alarm weekly is a
great way to get the speaker disconnected. Tests should be quiet, and only
generate a "test ok" message.

- - -
Are you an ISP? Tired of spam?
www.spamwhack.com A pre-emptive strike against spam!

Where's Dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

-----BEGIN PGP SIGNATURE-----
Version: PGPfreeware 6.5.2 for non-commercial use <<http://www.pgp.com>>

iQA/AwUBOUVhsIFlGDz1l6VWEQJhsACfbWlKZlSy10YiheHAJBHqzHV04+UAoND1
rl8T8yA/n8hpeAtbK5GdMUBM
=NA9G
-----END PGP SIGNATURE-----

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35. [aprsspec] Re: Mic-E converters and duplicate packet detection

From: Gun Steele W0GUN <w0gun@ar1.net>
Date: Mon, 12 Jun 2000 15:29:42 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90592-2000.06.12-18.36.26--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ian,

Trying to determine why a D700 won't 'List' any stations in memory.
Downloaded & skimmed thru the spec PDF, but on what page is a listing of
acceptable characters to follow the semicolon? My Kenwood only displays the
call sign with ?? after it and I have never had the freq. display blank to
the other info screen. So little APRS data here in SW Kansas, that I don't
know if the radio is working properly. The only data I have seen (Pmon) had
an ' after the semicolon.

Gun Steele W0GUN
SYNERTOOL

----- Original Message -----
From: "Ian Wade" <Ian.Wade@care4free.net>
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Sent: Sunday, June 11, 2000 1:15 AM
Subject: [aprsspec] Re: Mic-E converters and duplicate packet detection

> In article
<LYR14779-90008-2000.06.10-12.43.00--Ian.Wade#care4free.net@lists.tapr.org>,
Brent
> Hildebrand <bhildebrand@earthlink.net> writes
>
>
> >Here is a simple study of data over the last hour of you type of packet,
the
> >@ packet. Notice the mangled data portions of the packet. APRSd is my
> >suspected culprit here with the Mic-E conversion.
>
> >KI0BW-9>APK101,TCPIP*,N0BKB*:@101nroute...]"6P}

```

>
> [snip the rest of the packets]
>
>
> Here is the APRdec output for these packets, with some additional
comments:
>
>
~~~~~
>
>
> =====
> <<<< APRSdec >>>> The G3NRW APRS Packet Decoder
> =====
> Version 1.0.2c (8 June 2000)
> by Ian Wade, G3NRW (g3nrw@arrl.net)
>
> Input file = brent.log
> Output file = brent.out
> DOS Runtime = 11 Jun 2000 6:26:34.76
>
> NOTE: If this report contains anything that you think is incorrect,
> please email it to g3nrw@arrl.net for investigation. Thank you.
>
>
> -----
> Record #1
> KI0BW-9>APK101,TCPIP*,N0BKB*:@101nroute... ]"6P}
> APRS Data Type= Posit w/ time. With APRS
> **BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
> Long= **BAD LONG >180deg
> **BAD COURSE
> Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)
> GPS Fix= Old (last) NMEA Source= RMC Compression Origin= Digipeater
conversion
> Icon= **BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER
>
> -----
> Record #2
>
N5WYE-1>APRS,WD5CWZ-2*,WIDE/1:@101609z3042.1210N/00457.09Wk319/000/E>dsy/M0/
Off duty.. ]"4P}
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 16 hours 09 mins UTC
> Lat= **BAD LAT Long= **BAD LONG
> Icon= **INVALID ICON Overlay= **BAD OVERLAY CHAR '0' not allowed with
this symbol
> Altitude= 187 feet (57 meters)
>
>
> [***COMMENT: In this and later reports, one or more extraneous digits
> appear in the latitude hundredths, just before the "N"].
>
>
> -----
> Record #3
> N7IPB-12>APZ032,WA7TAI-10*,WIDE5-2:@100913z/fy00/V**j /Ken's Mobile
Shack.
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 09 hours 13 mins UTC
> Lat= 48 deg 24.99 min S Long= 122 deg 18.00 min W
> Icon= Jeep Overlay= (none)
>
> [***COMMENT: Is there anything wrong with this report and the next one?
They
> both appear to contain valid 13-character compressed posits].
>
>
> -----
> Record #4
> N7IPB-12>APZ032,WA7TAI-10*,WIDE5-1:@100915z/fy00/V**j /Ken's Mobile
Shack.
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 09 hours 15 mins UTC
> Lat= 48 deg 24.99 min S Long= 122 deg 18.00 min W
> Icon= Jeep Overlay= (none)
>
> [***COMMENT: Apparently nothing wrong with this. See above].

```

```

>
>
> -----
> Record #5
> KI0BW-9>APK101,TCPIP*,N0BKB*:@1016ute... ]"6C}
> APRS Data Type= Posit w/ time. With APRS
> **BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
> Lat= 64 deg 00.00 min N Long= 175 deg 06.82 min W
> **BAD COURSE
> Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)
> GPS Fix= Old (last) NMEA Source= RMC Compression Origin= Digipeater
conversion
> Icon= **BAD SYMBOL CODE
> **BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER
>
> -----
> Record #6
> KE5PL>APRS,KE5PL-1*,WIDE,K5ELP-2:@081044/B.John in Midland, TX.
> APRS Data Type= Posit w/ time. With APRS
> Day= 08 Time= 10 hours 44 mins Local
> Lat= 63 deg 22.34 min N Long= 124 deg 38.61 min E
> Course= 176 deg Speed= 254 knots (292.3 mph 470.4 kph 130.7 m/s)
> **BAD T-BYTE 'd'
> Icon= (No Icon) Overlay= **BAD OVERLAY CHAR 'B' not allowed with this
symbol
>
>
> [***COMMENT: The comment text was decoded as a compressed posit. The posit
> is actually missing. Question: are there any other reports like this,
where
> the actual posit is completely missing? If so, it could be that they
contained
> *compressed* posits which the conversion program didn't know what to do
with.
> Just a hunch].
>
>
> -----
> Record #7
>
G7GFC-7>APRS,RELAY,TRACE:@101632z5310.410N/00251.53W>116/000/E>dsy/M0/Offdut
y..
> ]"40}TMD700E+GPS3 David
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 16 hours 32 mins UTC
> Lat= **BAD LAT Long= **BAD LONG
> Icon= NWS Site Overlay= N
> Altitude= 82 feet (25 meters)
>
> [***COMMENT: Extraneous latitude "0" digit before the "N". I have seen
this
> many times before].
>
>
> -----
> Record #8
>
G7GFC-7>APRS,GW7H0H*,TRACE:@101634z5310.410N/00251.53W>116/000/E>dsy/M0/Offd
uty.. ]TMD700E+GPS3
> David
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 16 hours 34 mins UTC
> Lat= **BAD LAT Long= **BAD LONG
> Icon= NWS Site Overlay= N
>
> [***COMMENT: Extraneous latitude "0" digit before the "N"].
>
>
> -----
> Record #9
> KI0BW-9>APRS,TCPIP*,N0BKB*:@101638z3812.66N/092ute>/] "6<}Just crusing
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 16 hours 38 mins UTC
> Lat= 38 deg 12.66 min N Long= **BAD LONG
> Icon= **INVALID ICON Overlay= (none)
> Altitude= 1859035 feet (566634 meters)
>
>
> [***COMMENT: Just *what* is he "crusing" in at that altitude, 352 miles up

```

```

> in the sky .....].
>
>
> -----
> Record #10
>
G7GFC-7>APRS,GW7H0H*,TRACE:@101642z5310.410N/00251.53W>116/000/E>dsy/M0/Offd
uty.. ]TMD700E+GPS3
> David
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 16 hours 42 mins UTC
> Lat= **BAD LAT Long= **BAD LONG
> Icon= NWS Site Overlay= N
>
> [***COMMENT: Extraneous latitude "0" digit before the "N"].
>
>
> -----
> Record #11
> KI0BW-9>APK101,TCPIP*,N0BKB*:@1016te... ]"6N}
> APRS Data Type= Posit w/ time. With APRS
> **BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
> Lat= 64 deg 17.40 min N Long= 94 deg 54.76 min W
> **BAD COURSE
> Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)
> GPS Fix= Old (last) NMEA Source= RMC Compression Origin= Digipeater
conversion
> Icon= **BAD SYMBOL CODE
> **BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER
>
> -----
> Record #12
>
KI0BW-9>APRS,TCPIP*,N0BKB*:@10164@101649z3812.65N/09241.29W>033/000/E>dsy/M1
/Enroute... ]"6N}
> APRS Data Type= Posit w/ time. With APRS
> **BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
> Lat= **BAD LAT Long= **BAD LONG
> Icon= **INVALID ICON Overlay= **BAD OVERLAY CHAR '1' not allowed with
this symbol
> Altitude= 778 feet (237 meters)
>
> [***COMMENT: Here the timestamp is apparently repeated, sort of].
>
>
> -----
> Record #13
> KI0BW-9>APK101,TCPIP*,N0BKB*:@101nroute... ]"6G}
> APRS Data Type= Posit w/ time. With APRS
> **BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
> Long= **BAD LONG >180deg
> **BAD COURSE
> Speed= 0 knots (0.0 mph 0.0 kph 0.0 m/s)
> GPS Fix= Old (last) NMEA Source= RMC Compression Origin= Digipeater
conversion
> Icon= **BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER
>
> -----
> Record #14
>
G7GFC-7>APRS,GW7H0H*,TRACE:@101659z5310.410N/00251.53W>116/000/E>dsy/M0/Offd
uty..
> ]"44}TMD700E+GPS3 David
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 16 hours 59 mins UTC
> Lat= **BAD LAT Long= **BAD LONG
> Icon= NWS Site Overlay= N
> Altitude= 95 feet (29 meters)
>
> [***COMMENT: Extraneous latitude "0" digit before the "N"].
>
>
> -----
> Record #15
>
K7GPS-9>APRS,K7GPS-10*,WIDE4-3:@101701z4634.610N/12317.79Wv269/000/E>dsy/M2/
In Service ]"5?}
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 17 hours 01 mins UTC

```

```

> Lat= **BAD LAT Long= **BAD LONG
> Icon= NWS Site Overlay= N
> Altitude= 430 feet (131 meters)
>
> [***COMMENT: Extraneous latitude "0" digit before the "N"].
>
>
> -----
> Record #16
>
K7GPS-9>APRS,K7GPS-10*,WIDE4-3:@101703z4634.610N/12317.79Wv269/000/E>dsy/M2/
In Service ]"5E}
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 17 hours 03 mins UTC
> Lat= **BAD LAT Long= **BAD LONG
> Icon= NWS Site Overlay= N
> Altitude= 449 feet (137 meters)
>
> [***COMMENT: Extraneous latitude "0" digit before the "N"].
>
>
> -----
> Record #17
> KI0BW-9>APRS,TCPIP*,N0BKB*:@101709z38e>/]"6I}
> APRS Data Type= Posit w/ time. With APRS
> Day= 10 Time= 17 hours 09 mins UTC
> Lat= **BAD LAT Long= **BAD LONG
> Icon= **BAD SYMBOL CODE
> Overlay= **BAD OVERLAY CHAR 'I' not allowed with this symbol
>
> [**COMMENT: This non-Mic-E report contains a vestige of a Mic-E encoded
posit].
>
>
> -----
> Record #18
> KE5PL>APRS,KE5PL-1*,WIDE,K5ELP-2:@081044/B.John in Midland, TX.
> APRS Data Type= Posit w/ time. With APRS
> Day= 08 Time= 10 hours 44 mins Local
> Lat= 63 deg 22.34 min N Long= 124 deg 38.61 min E
> Course= 176 deg Speed= 254 knots (292.3 mph 470.4 kph 130.7 m/s)
> **BAD T-BYTE 'd'
> Icon= (No Icon) Overlay= **BAD OVERLAY CHAR 'B' not allowed with this
symbol
>
>
> [***COMMENT: This is identical to Record #6. Why did it show up twice?].
>
>
> -----
> Record #19
> KI0BW-9>APK101,TCPIP*,N0BKB*:@101E>dsy/M1/Enroute... ]"6@}Just cruising
> APRS Data Type= Posit w/ time. With APRS
> **BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
> Lat= 61 deg 20.63 min N Long= 34 deg 10.69 min W
> Course= 332 deg Speed= 186 knots (214.0 mph 344.5 kph 95.7 m/s)
> GPS Fix= Old (last) NMEA Source= GLL Compression Origin= Pico
> Icon= **BAD SYMBOL TABLE IDENTIFIER/OVERLAY CHARACTER
>
> -----
> Record #20
> KI0BW-9>APK101,TCPIP*,N0BKB*:@1010/E>dsy/M1/Enroute... ]"6@}Just cruising
> APRS Data Type= Posit w/ time. With APRS
> **BAD/MISSING TIMESTAMP. Rest of data may not decode correctly.
> Lat= 74 deg 08.03 min S Long= 116 deg 04.16 min W
> Course= 312 deg Speed= 641 knots (737.6 mph 1187.1 kph 329.8 m/s)
> **BAD T-BYTE 't'
> Icon= Restrooms Overlay= **BAD OVERLAY CHAR 'd' not allowed with this
symbol
>
> ++++++ END OF FILE ++++++
>
>
>
> ~~~~~
>
>
>

```



```

> [***BOTTOM LINE COMMENT: Most of these reports contain "/E>dsy". Is this
> a common factor in the problem. Which program generates "/E>dsy"?].
>
>
>
> 73
> Ian, G3NRW
> Technical Editor, APRS Protocol Specification
> ***** Third draft now available *****
> --
> +-----+
> | APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
> | email: g3nrw@arrl.net |
> |
> | APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
> | APRS DECODER: http://www.netro.co.uk/aprs.htm |
> +-----+
>
> ---
> You are currently subscribed to aprsspec as: w0gun@arrl.net
> To unsubscribe send a blank email to leave-aprsspec-15515A@lists.tapr.org

```

You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

36. [aprsspec] Re: Mic-E converters and duplicate packet detection

```

From: Ian Wade <Ian.Wade@care4free.net>
Date: Tue, 13 Jun 2000 07:00:18 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-90688-2000.06.13-04.57.43--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

```

In article <000201bfd4c6$8da3d240$5b6686d1@micronmsdn>, Gun Steele W0GUN
<w0gun@arrl.net> writes
>Ian,
> Trying to determine why a D700 won't 'List' any stations in memory.
>Downloaded & skimmed thru the spec PDF, but on what page is a listing of
>acceptable characters to follow the semicolon? My Kenwood only displays the
>call sign with ?? after it and I have never had the freq. display blank to
>the other info screen. So little APRS data here in SW Kansas, that I don't
>know if the radio is working properly. The only data I have seen (Pmon) had
>an ' after the semicolon.
>

```

Hi Gun. I'm not sure what you mean by "to follow the semicolon". I wonder if you mean the colon : . If so, the full list of acceptable characters is on page 17 of draft version 1.0.1m (30 April 2000) -- "APRS Data Type Identifiers".

The apostrophe ' signifies "Old Mic-E Data", for everything *except* the D700 -- Kenwood got it wrong, and uses the ' to signify "Current Mic-E Data" instead.

Other Data Type Identifiers you will most often see from a Kenwood are:

```

> Status message
: Message
; Object

```

Hope this helps.

```

73
Ian, G3NRW
Technical Editor, APRS Protocol Specification
***** Third draft now available *****
--

```

```

+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+

```

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37. [aprsspec] leave-aprsspec-11602B@lists.tapir.org

From: kf4chg <kf4chg@atlantic.net>
Date: Wed, 14 Jun 2000 22:09:39 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-90986-2000.06.14-21.12.19--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

leave-aprsspec-11589P@lists.tapir.org
[Attachment: kf4chg.vcf; text/x-vcard; 308 bytes]

38. [aprsspec] A Proposal

From: Jim Wagner <wagnerj@proaxis.com>
Date: Sat, 17 Jun 2000 12:55:28 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-91445-2000.06.17-14.58.58--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

APRS Proposal

I am considering the following capability in my version of APRS. This capability has several parts and some broad implications.

(1) There will be a "reference view" for the map. After a reference view is selected, clicking a button will return you to the same view. The map window will be the same size and the same geographical area will be shown from the same map at the same scale. This is not a big deal.

(2) Whenever a user sets a NEW reference view, a dialog box will appear, asking if this view is to be transmitted as an open-box object. The default is "NO" and the user will have to choose "YES" in order to have it sent.

(3) Such objects originating from a reference view selection will be transmitted with a standard name, perhaps "RefVw####" (9 characters to satisfy the naming convention for objects). The 4 "#" characters might represent a sequence number or other info yet to be specified.

Other than concerns of "clogging the channel", such a transmission should be fairly benign. Other APRS stations will interpret it as an area object. It will appear on their maps as a rectangle if the object falls within the boundaries of a map they are using. It will, if I understand the operation of other programs, fade away after a while.

(4) Other users of my software, however, on receiving an area object named "RefVw####" (or what ever its final "standard" name is) will get a dialog box asking whether or not the user want to "adopt" this reference view. If they choose "YES" it becomes their reference view but they transmit nothing (that is, THEY do not begin transmitting an area object). If they choose "NO", then nothing happens. I have not yet decided what to do if the user chooses NO and another transmission of the same view is heard. There WILL be a cautionary alert if they choose YES when there is an existing reference view.

Once adopted, any time they click the "Reference View" button, they will see (approximately) the same view as anyone else who has adopted this reference view. This reference view remains until they change it or Quit the program. The user will be able to scroll away from this view, change maps, etc, but clicking the "Reference View" button will always return them to that view.

There will be differences in map style and resolution, but the same geographical area will be displayed in every case, within the constraints of the square-root of the height and width specification. That is, the originator of the view might have it set to .081 degrees width and everyone else will see at .064 degrees width because the width is transmitted as 08.

It appears that the use of area message also limits the largest view to about 9.8 degrees (99*2 hundredths of a degree).

While this scheme is less than ideal, I have chosen it for several reasons:

- * It should have little negative effect on people who do not use my APRS implementation.
- * It uses existing protocol definitions.
- * It allows experimenting with this idea of automatic transmission of a common reference view, which should be particularly useful for event and

SAR situations. It should make it very easy for a new station joining the activity to quickly see what every one else is seeing. No voice coordination is required.

* It allows exploration of methods of dealing with the acknowledged problem of reference views which extend beyond the user's map capability.

* If it proves to be useful, a better suited message type might be developed in later standards documents. These experiments should be useful in determining whether or not it IS useful.

=====

I welcome ideas, suggestions, comments, etc.

Jim Wagner
Oregon Research Electronics

wagnerj@proaxis.com Tangent, Oregon 97389
KA7EHK@KC7KFE.OR.USA.NOAM near Corvallis OR, home of
ka7ehk@yahoo.com Oregon State University

A computer without Windows is like a cake without mustard. - anonymous

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39. [aprsspec] Re: A Proposal

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sat, 17 Jun 2000 18:59:16 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-91474-2000.06.17-18.03.16--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I applaud the originality of this idea and have no objections. But the emphasis on "reference" view has nothing to do with the previous discussions of a common requirement to display a "map scale". Having said that, it seems ok to me, though I don't see it being used much. The power of APRS is that EVERY viewer has his own screen and his own ability to zoom anywhere at any time to see anything he wants. He rarely if ever remains on the whole-event-view. He focuses on what is needed at any instant in time. But I think this is a perfect application of the "AREA-BOX" feature in APRS. For whatever its value... So, ok by me.. :-)

bob

On Sat, 17 Jun 2000, Jim Wagner wrote:

```
>
>
> APRS Proposal
>
> I am considering the following capability in my version of APRS. This
> capability has several parts and some broad implications.
>
> (1) There will be a "reference view" for the map. After a reference view is
> selected, clicking a button will return you to the same view. The map window
> will be the same size and the same geographical area will be shown from the
> same map at the same scale. This is not a big deal.
>
> (2) Whenever a user sets a NEW reference view, a dialog box will appear,
> asking if this view is to be transmitted as an open-box object. The default
> is "NO" and the user will have to choose "YES" in order to have it sent.
>
> (3) Such objects originating from a reference view selection will be
> transmitted with a standard name, perhaps "RefVw####" (9 characters to
> satisfy the naming convention for objects). The 4 "#" characters might
> represent a sequence number or other info yet to be specified.
>
> Other than concerns of "clogging the channel", such a transmission should
> be fairly benign. Other APRS stations will interpret it as an area object.
> It will appear on their maps as a rectangle if the object falls within the
> boundaries of a map they are using. It will, if I understand the operation
> of other programs, fade away after a while.
```

```

>
> (4) Other users of my software, however, on receiving an area object named
> "RefVw####" (or what ever its final "standard" name is) will get a dialog
> box asking whether or not the user want to "adopt" this reference view. If
> they choose "YES" it becomes their reference view but they transmit nothing
> (that is, THEY do not begin transmitting an area object). If they choose
> "NO", then nothing happens. I have not yet decided what to do if the user
> chooses NO and another transmission of the same view is heard. There WILL
> be a cautionary alert if they choose YES when there is an existing
> reference view.
>
> Once adopted, any time they click the "Reference View" button, they will
> see (approximately) the same view as anyone else who has adopted this
> reference view. This reference view remains until they change it or Quit
> the program. The user will be able to scroll away from this view, change
> maps, etc, but clicking the "Reference View" button will always return them
> to that view.
>
> There will be differences in map style and resolution, but the same
> geographical area will be displayed in every case, within the constraints
> of the square-root of the height and width specification. That is, the
> originator of the view might have it set to .081 degrees width and everyone
> else will see at .064 degrees width because the width is transmitted as 08.
>
> It appears that the use of area message also limits the largest view to
> about 9.8 degrees (99**2 hundredths of a degree).
>
> While this scheme is less than ideal, I have chosen it for several reasons:
>
> * It should have little negative effect on people who do not use my APRS
> implementation.
>
> * It uses existing protocol definitions.
>
> * It allows experimenting with this idea of automatic transmission of a
> common reference view, which should be particularly useful for event and
> SAR situations. It should make it very easy for a new station joining the
> activity to quickly see what every one else is seeing. No voice
> coordination is required.
>
> * It allows exploration of methods of dealing with the acknowledged problem
> of reference views which extend beyond the user's map capability.
>
> * If it proves to be useful, a better suited message type might be
> developed in later standards documents. These experiments should be useful
> in determing whether or not it IS useful.
>
> =====
>
> I welcome ideas, suggestions, comments, etc.
>
>
> Jim Wagner
> Oregon Research Electronics
> -----
> wagnerj@proaxis.com          Tangent, Oregon 97389
> KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of
> ka7ehk@yahoo.com             Oregon State University
> -----
> A computer without Windows is like a cake without mustard. - anonymous
>
>
>
>
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>

```

APRSDOS REPLY/COMMENT:

```

Reply mail addr:  wb4apr@amsat.org
US mail address:  115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY:  http://web.usna.navy.mil/~bruninga/dayton.html
See Maryland APRS LIVE:  http://web.usna.navy.mil/~bruninga/aprs.html
See GPS on ANY radio:  http://www.tapr.org/tapr/html/mic-e.html

```

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40. [aprsspec] APRS DECODER version 2.0 now available

From: Ian Wade <Ian.Wade@care4free.net>
Date: Tue, 20 Jun 2000 16:44:12 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-91999-2000.06.20-10.53.40--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

=====
ANNOUNCING <APRSdec>TM Version 2.0
THE FULL APRS DECODER PROGRAM
by Ian Wade, G3NRW
16 June 2000
=====

<APRSdec> version 2.0 is now available. <APRSdec> parses APRS packets in TNC/IGate output format or UI-View log format, producing a full decode of every data element in each packet.

<APRSdec> is a particularly useful tool for:

- o APRS software development and testing.
- o PIC development and testing.
- o Network fault-finding and diagnostics.
- o Learning about the APRS protocol.
- o Checking packet formats.

<APRSdec> version 2.0 is a significant enhancement over earlier versions. It has much improved error checking, and for the first time is provided as a Perl 4 source, allowing it to run on most platforms including DOS, Windows and Linux/Unix.

<APRSdec> is made available under GNU General Public License.

<APRSdec> is a trademark owned by Ian Wade, G3NRW.

=====
<APRSdec> FEATURES
=====

- o Runs under native DOS, Win 95/98 and Linux/Unix. (It will almost certainly run under Windows NT and Windows 2000 as well, but this has not been tested).
- o Accepts raw input in TNC/IGate output format (TNC_header:data).
- o Accepts raw input in UI-View 2-line log format; it is no longer necessary to edit log files before using <APRSdec>. In addition, as well as decoding APRS packets, <APRSdec> also decodes the 15-digit UI-View timestamp.
- o Performs rigorous format checking, with detailed error reporting.
- o Understands position ambiguity, reporting the bounding box in which the station is located.
- o Compares lat/long position against a prefix/country database -- if the station's position appears to be outside the country, <APRSdec> reports a possible anomaly.
- o Reports data values in imperial, nautical and metric units.
- o Fully decodes Mic-E and compressed position formats.
- o Recognizes data from Kenwood TH-D7 and DM-700 radios, and changes the incorrect DM-700 APRS Data Type Identifier to "Current Mic-E Data".
- o Provides detailed weather station reports, including the calculation of windchill and dew point.

- o Decodes storm data.
- o Decodes bearing and range data.
- o Decodes DX Cluster reports, showing the data as it will appear on TH-D7 and DM-700 screens.

=====

SOME EXAMPLES OF <APRSdec> OUTPUT

=====

A simple lat/long report:

Record #170

KE4SZT>APRS,W4NHV-9,WIDE*,WIDE/2:@270700z3408.76N/07924.60W- John in Marion, SC-793-

APRS Data Type= Posit w/ time. With APRS

Day= 27 Time= 07 hours 00 mins UTC

Lat= 34 deg 08.76 min N Long= 79 deg 24.60 min W

Icon= House QTH VHF Overlay= (none)

A raw Mic-E report. <APRSdec> recognizes this comes from a Kenwood TM-D700 radio and automatically changes the APRS Data Type to "Current Mic-E data":

Record #8051

KC7EQL>VE7VAN-3*>WIDE3-1>T8PWPW:'37jllIe-/]'55}Mark at Home awaits Sunsat

APRS Data Type= Current Mic-E data

Radio= Kenwood TM-D700

Message Type= /M2/In Service

Lat= 48 deg 07.07 min N Long= 123 deg 27.65 min W

Icon= House QTH VHF Overlay= (none)

Course= 173 deg Speed= 4 knots (4.6 mph 7.4 kph 2.1 m/s)

Altitude= 397 feet (121 meters)

A compressed lat/long position, within an Object report:

Record #1763

N9IDH>APRK11,AE9A-10*,WIDE3-2:;A016 _111826z\%H+!JvA!Sk{!R=05280/437.051/13Khz/APRStk

APRS Data Type= Object

Object Name= 'A016 ' Object Status= Killed

Day= 11 Time= 18 hours 26 mins UTC

Lat= 81 deg 14.20 min N Long= 14 deg 04.30 min W

GPS Fix= Old (last) NMEA Source= Other Compression Origin= Compressed

Course= 296 deg Speed= 1018 knots (1171.5 mph 1885.3 kph 523.7 m/s)

Icon= Satellite/PAC Overlay= (none)

A lat/long report with position ambiguity. The station may be located anywhere inside the bounding box:

Record #121

W9ZGU>APR846,WA4WHD-3*,WIDE/V:=2559. N/08010. W-PHG6560/Carl's Castle!

APRS Data Type= Posit w/o time. With APRS

Ambiguous position. Opposite corners of bounding box:

NW Corner: Lat= 25 deg 59.99 min N Long= 80 deg 10.99 min W

SE Corner: Lat= 25 deg 59.00 min N Long= 80 deg 10.00 min W

Icon= House QTH VHF Overlay= (none)

Power= 36 watts Height above average terrain= 320 feet (97.5 meters)

Gain= 6 dB Range Circle= 41.4 miles (66.6 km) Directivity= Omni-directional

A Maidenhead Locator report. The station may be located anywhere inside the bounding box:

Record #459

CT1DBH-1>ID:[IM58IS]

APRS Data Type= Maidenhead Grid Square

Maidenhead locator bounding box:

NW Corner: Lat= 38 deg 47.50 min N Long= 9 deg 20 min W
SE Corner: Lat= 38 deg 45.00 min N Long= 9 deg 15 min W
**NOTE: This Maidenhead format with square brackets is obsolete.

A UI-View report, including the decoded UI-View timestamp.
(This report shows APRS Working Group Chairman John Ackermann,
N8UR, jogging towards G3NRW's QTH at over 72mph -- he was on a
train at the time! <APRSdec> also recognizes that John is
outside the contiguous 48 states, so it questions the reported
location):

Record #622
N8UR-7*>RELAY>WIDE>WIDE>WIDE2-2>U1UVXX (UI):`v9f">[>"58}
UI-View Timestamp= 27 May 2000 12 hrs 58 mins 32 secs (PC clocktime)
APRS Data Type= Current Mic-E data
Radio= Kenwood TH-D7
Message Type= /M2/In Service
Lat= 51 deg 56.88 min N Long= 0 deg 29.74 min W
**QUESTION: Is this lat/long position reasonable?
It seems a long way from home for this callsign.
Icon= Jogger Overlay= (none)
Course= 1 deg Speed= 63 knots (72.5 mph 116.7 kph 32.4 m/s)
Altitude= 407 feet (124 meters)

A full WX station report, with computed windchill and dewpoint:

Record #5034
KF0ZH*>APR819,GATE,WIDE2-2:@111955z4447.06N/09329.48W_125/008g009t079r000p003...h41b10190dU2k
APRS Data Type= Posit w/ time. With APRS
Day= 11 Time= 19 hours 55 mins UTC
Lat= 44 deg 47.06 min N Long= 93 deg 29.48 min W
Icon= WX station Overlay= (none)
Wind Direction= 125 deg Speed= 008 knots (9.2 mph 14.8 kph 4.1 m/s)
Gust Speed= 9 mph (14.5 kph 4.0 m/s 7.8 knots)
Temp= 79 degF (26.1 degC) Windchill= 76.5 degF (24.7 degC)
Rain: Last hour= 0 in (0.0 mm) Last 24 hrs= 0.03 in (0.8 mm)
Since midnight= (Indeterminate)
Humidity= 41 percent Dew Point= 53.2 degF (11.8 degC)
Barometric Pressure= 1019 mbar/hP

A DX Cluster report, showing how the data will appear on
Kenwood radio displays:

Record #3852
NA4V-3>RESORC,AB4KN-2*,WIDE3-2:DX de NA4V-3 >F029@1509 F020@1503
SATS
DX Cluster Information:

TH-D7 Screen 1	TH-D7 Screen 2	TM-D700
+-----+	+-----+	+-----+
Dx:F020@1503	Dx:F020@1503	1:F020@1503 F029@1509 SATS
F029@1509		
SATS		
+-----+	+-----+	+-----+

=====

=====

<APRSdec> may be downloaded from <http://www.netro.co.uk/aprs.htm>. There are
two distribution files: "aprsdec.zip" for DOS/Windows and "aprsdecu.tar" for
Unix/Linux. The DOS/Windows distribution includes a suitable Perl compiler.

73
Ian, G3NRW
Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I0915X] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
|
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+
```

You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

41. [aprsspec] Re: MIC-E and binary encoding

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>
Date: Tue, 20 Jun 2000 14:30:16 -0700 (PDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Private Discussion <aprsdev@lists.tapr.org>
Message-ID: <LYR11589-92060-2000.06.20-16.33.55--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Not to beat a dead horse tooooo much, but has anyone checked that
"mfilter 0" is set as the default in all of the aprs packages,
including the setups for aprsd and such?

I had trouble receiving MIC-E packets at home until I set mfilter to
0. The PK-88 TNC was filtering out the non-printable characters for
me, so those characters never reached my computer. Even "mfilter 0"
could cause problems for some (few) packets, as it will filter out
any 0x00 characters.

Mfilter could be another reason that MIC-E packets are getting
corrupted here and there, particularly at igates.

I haven't check though, is mfilter a TAPR-2 command? It's definitely
in some AEA TNC's.

If anyone has a better solution (a way to turn of filtering
altogether?), please let me know. Yes, I know that KISS mode
is the proper solution.

Curt Mills, WE7U hacker.NO_*SPAM@tc.fluke.com
Senior Methods Engineer/SysAdmin
"Lotto: A tax on people who are bad at math." -- unknown
"Windows: Microsoft's tax on computer illiterates." -- WE7U

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42. [aprsspec] Re: MIC-E and binary encoding

From: Dale Heatherington <dale@wa4dsy.net>
Date: Tue, 20 Jun 2000 19:50:22 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Private Discussion <aprsdev@lists.tapr.org>
Message-ID: <LYR11589-92072-2000.06.20-18.57.09--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My KPC-3 manual shows a "FILTER" command which removes
control codes \$00 to \$19 (hex) . Since Mic-E only uses 5 unprintable
characters, \$1C, \$1D, \$1E, \$1F and \$7F this should not affect it.

On Tue, 20 Jun 2000, Curt Mills, WE7U wrote:
> Not to beat a dead horse tooooo much, but has anyone checked that
> "mfilter 0" is set as the default in all of the aprs packages,
> including the setups for aprsd and such?
>
> I had trouble receiving MIC-E packets at home until I set mfilter to
> 0. The PK-88 TNC was filtering out the non-printable characters for
> me, so those characters never reached my computer. Even "mfilter 0"
> could cause problems for some (few) packets, as it will filter out
> any 0x00 characters.
>
> Mfilter could be another reason that MIC-E packets are getting
> corrupted here and there, particularly at igates.
>
> I haven't check though, is mfilter a TAPR-2 command? It's definitely


```

> in some AEA TNC's.
>
> If anyone has a better solution (a way to turn of filtering
> altogether?), please let me know. Yes, I know that KISS mode
> is the proper solution.
>
> Curt Mills, WE7U                                hacker.NO_*SPAM@tc.fluke.com
> Senior Methods Engineer/SysAdmin
> "Lotto: A tax on people who are bad at math." -- unknown
> "Windows: Microsoft's tax on computer illiterates." -- WE7U
>
>
> ---
> You are currently subscribed to aprsspec as: dale@wa4dsy.net
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
--
Dale Heatherington
dale@wa4dsy.net
Web Page http://www.wa4dsy.net
Sent by KMail for Linux

---
You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
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```

43. [aprsspec] Re: MIC-E and binary encoding

```

From: archer@eskimo.com
Date: Tue, 20 Jun 2000 22:35:12 -0700 (PDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>,
    APRS Private Discussion <aprsdev@lists.tapr.org>
Message-ID: <LYR11589-92128-2000.06.21-00.36.22--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```

On Tue, 20 Jun 2000, Dale Heatherington wrote:

```

> My KPC-3 manual shows a "FILTER" command which removes
> control codes $00 to $19 (hex) . Since Mic-E only uses 5 unprintable
> characters, $1C, $1D, $1E, $1F and $7F this should not affect it.

```

The spec also shows that some telemetry bytes may be 0x00 - 0xff, but I think that was only for beta version MIC-E's? How many of those might even be around? Probably very few. I haven't looked at the spec enough to know if there might be other bytes than can be below 0x20 in some of the other message formats.

The AEA PK-88 manual states the default value for mfilter is 0x80. This will filter out all received control characters except 0x0a, 0x0d, and 0x09. This means that 0x1c - 0x1f will disappear. I set my TNC to "mfilter 0", so it'll only filter out 0x00 bytes.

Anyone running AEA TNC's will have problems decoding MIC-E packets correctly unless they changes mfilter from the default value or are running KISS mode. The packets can become corrupted and then can be relayed corrupted. The symptoms I was seeing on Xastir with a PK-88 were that positions would suddenly dart to the left or vertically, then return back on track after the region of unprintable characters was crossed by the mobile. I still see that happening, but it's not my receiving station that is causing the problem anymore.

I just found an original TAPR2, Rev 2 manual, and it specifies that mfilter has a default of "none" for the TAPR-2. This manual was printed in October of 1985, so the default may be different for newer EPROM's.

```

Curt, WE7U.                                BowHunter@mail.com
http://www.eskimo.com/~archer
    Lotto: A tax on people who are bad at math. - unknown
Windows: Microsoft's tax on computer illiterates. - WE7U.

```

```

---
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```

44. [aprrspec] net cycle time (was D700 transmit "problem")

From: "Richard Carter" <rich.carter@windriver.com>
Date: Wed, 21 Jun 2000 13:06:54 -0400
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-92215-2000.06.21-12.10.22--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I dug out my spec. This is quoted from V1.0 .

2. The objective is to have a net cycle time of 10 minutes for local use. This means that within 10 minutes of arrival on the scene, it is possible to captured the entire tactical picture.
3. All stations, even fixed stations, should beacon their position at the net cycle time rate.

I suggest that users who need to send position updates more frequently consider the impact of doing so. Though it may work fine in some uncrowded areas, it may cause interference in other areas. It may be advisable to use a private frequency, so as not to interfere with others.

73's
Rich - KE1EV

-----Original Message-----

From: bounce-htaprs-14533@lists.tapr.org
[mailto:bounce-htaprs-14533@lists.tapr.org]On Behalf Of Robbie Robertson
Sent: Wednesday, June 21, 2000 12:04 PM
To: TAPR Hot Technology APRS
Cc: TAPR Hot Technology APRS
Subject: [htaprs] RE: D700 transmit "problem"

Richard Carter wrote:

>
> Two minutes sounds too frequent. I don't have my doumentation with me, so
I
> can't quote this directly. If I remember, the the proper transmission
> interval should be more like 10 minutes, otherwise you will flood the net.
>
> Rich - KE1EV
>

I think this depends on what the tracker is doing and where he is at.. 10 minutes at 60/75 miles an hour???
At that speed @ 1 minute he would be outta your hair in 10 minutes, or you wouldn't have even known he was there!! :-) IMHO

Robbie

--

Are we having fun yet?
73 - Robbie - WA9INF
***** --... -- *****

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You are currently subscribed to aprrspec as: lyris.aprrspec@tapr.org
To unsubscribe send a blank email to leave-aprrspec-11589P@lists.tapr.org

45. [aprrspec] RE: [htaprs] Re: net cycle time (was D700 transmit "problem")

From: "Richard Carter" <rich.carter@windriver.com>
Date: Wed, 21 Jun 2000 15:37:16 -0400
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-92251-2000.06.21-14.41.19--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I didn't write the spec. I assume that they did an analysis to determine what kind of data rate the protocol will handle and based their net cycle recommendation on that figure. I use their recommendation to set my

transmit interval to 10 minutes. If running at a significantly higher data rate interferes with the operation of the net, then (the way I read it) you are in violation of FCC regulations. Though you could probably listen to the frequency and get a good idea how busy it is running in your local area, you probably can't determine how far your repeated signal is being transmitted. I doubt that you could determine if running a faster net cycle would cause interference. If you really need a higher update rate, then you are using the protocol for more than its intended purpose. Switching to a private frequency for that purpose sounds like the proper thing to do.

Kenwood set the default cycle time to 3-minutes. I find this odd, since it appears to violate the spec. Is everyone running at a 3-minute rep-rate?

Perhaps someone from the APRS Spec group could provide their comments?

73's
Rich - KE1EV

-----Original Message-----

From: bounce-htaprs-14533@lists.tapr.org
[mailto:bounce-htaprs-14533@lists.tapr.org] On Behalf Of Steve Bragg
Sent: Wednesday, June 21, 2000 2:18 PM
To: TAPR Hot Technology APRS
Subject: [htaprs] Re: net cycle time (was D700 transmit "problem")

Sorry, folks, but I have to speak up on this one.

Richard Carter wrote:

> 2. The objective is to have a net cycle time of 10 minutes for local use.
> This
> means that within 10 minutes of arrival on the scene, it is possible to
> captured the entire tactical picture.
> 3. All stations, even fixed stations, should beacon their position at the
> net
> cycle time rate.

Omigosh. Are you serious? This is surely NOT addressing GPS mobiles. Otherwise, what's the point? Why even have a tracker if someone won't even see you as you pass through their city?

> I suggest that users who need to send position updates more frequently
> consider the impact of doing so. Though it may work fine in some
uncrowded
> areas, it may cause interference in other areas.

It is most advisable only to transmit when there is something that has changed. Your house doesn't move, so it should beacon at the net cycle rate. Timed rate beaconing for mobiles sends information at the wrong time, yielding excessive "spam" and a poor track at the same time. Corner-pegging and distance-pegging are a much better way, but unfortunately very few APRS versions/devices currently support them (APRS+SA, HamHUD).

> It may be advisable to use
> a private frequency, so as not to interfere with others.

I hope this sentiment is not heeded by others, because it will 1) fragment the APRS network, and 2) render precious assets such as digipeters and IGATEs unusable.

73,

Steve

```
  / // // // | / _ \ / // // | // |
 / , < / // | / / // // // | // // |
 / // | / _ | \ , // // // | // // |
 / _ | / // | _ // // // | _ // // |
```

=====

Steve Bragg KA9MVA ka9mva@qsl.net ICQ:29816109
HamHUD APRS Mobile Terminal: www.qsl.net/ka9mva/hamhud
Owasso, Oklahoma, USA EM27ac
Owasso Amateur Radio Club www.qsl.net/oarc

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46. [aprsspec] APRS FD mode

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 26 Jun 2000 09:41:28 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: aprsspec@lists.tapr.org
Message-ID: <LYR11589-93036-2000.06.26-08.45.58--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

APRS FD ops,
The minimum number of packets required to support just 20 APRS Field Day contacts can be from 400 to over 2000. Each station having to send a QSL to every other station (including up to 5 retries each).. Obviously this is a waste of bandwidth. This FD, I experimented with an auto-APRS-FD mode where my station combined all QSL information into one or more re-usable BULLETIN packets:

BLN1CQFD :QSL 3A-MDC,W3ABC,N0KT,KC5ION,KC8UZ,WB4APR,N3KTP,N8DEU,K2SAT
BLN2CQFD :QSL 3A-MDC,N4ZQ,K4RS,KC8MZM,W8UC,N5ZNL,KC8KZM

Here the BULLETIN numbers are the 1 & 2 characters. By bundling the QSL calls in one bulletin, you improve the chances that the other stations copy it while minimizing QRM. Once it is full, then move onto BLN2CQFD. Then the decaying algorithm for APRS will concentrate on the older bulletin less and less, and place priority on the new BLN2CQFD bulletin.

DETAILS:

1. Put your FD exchange in your POSIT comment 3A-MDC for example
2. For each new station seen:
 - * Add the call sign to a single "QSL" BULLETIN line to REPLACE your previous QSL bulletin. ERASE the previous packet.
 - * If one line fills up, then move to next BLN#CQFD. The full BLN#CQFD line decays as usual to lower and lower transmit rates.

EXAMPLE:

After 1st stn BLN1CQFD :QSL 3A-MDC,W3ABC
after 2nd stn BLN1CQFD :QSL 3A-MDC,W3ABC,W4XYZ
after 3rd stn BLN1CQFD :QSL 3A-MDC,W3ABC,W4XYZ,W3XYZ,W5HIJ
etc BLN1CQFD :QSL 3A-MDC,W3ABC,W4XYZ,W3XYZ,W5HIJ,WB4APR,W3STL

In APRSdos, the actual Key strokes to COPY a message and add to the end are as follows:

S,<,#,XXXXXX
E,#

Where S is for SEND, <(ENTER KEY), is to RESEND the same TOCALL (BLN1), # is the line number of the previous line, and XXXXX is the new call for the end. Then E is to erase the previous copy of the old Bulletin.

Thus, your station is never sending more than a single packet, yet that single packet is not only serving to QSL up to 8 stations at a time, it is also calling CQ and including YOUR FD exchange for everyone else.

Quite efficient. In fact, MY station was fully automatic. It did all of this unattended. It looked for any NEW station, checked to make sure it was an APRS-MESSAGE capable station (not a DIGI, WX station, or TRACKER or many others) and then added it to the BULLETIN.

For next year, I will make the above filter even more exclusive and have it ONLY try to QSL other "HUMAN" stations. Turns out, there are LOTS of APRS stations with the "lights-on, but nobody's home". To minimize QRM, I want the algorithm to ONLY try to QSL other APRS Field Day stations. This is why the BLN#CQFD includes the BULLETIN GROUP of "CQFD" so that the auto-QSO software at the other end will know to QSL back...

SCORING. According to the "lawyers", under this algorithm, if you SEE your call in anyone else's QSL Bulletin, it counts (assuming all of your

outgoing packets contain your FD exchange). That is why I included the FD Exchange in the BULLETIN too.

SUMMARY. With this APRS-FD Algorithm, the number of Packets on the air for 20 stations is reduced from 400/1200 down to a minimum of 20. Yes, those 20 packets are repeated, but due to the decaying-algorighm of APRS, they fade out of the system. Just think in terms of every station on the air for FD is just repeating ONE packet. Thats no worse than NORMAL! yet it accomplishes the OBJECTIVE...

de WB4APR, Bob

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47. [aprsspec] Mic-E Latitude encoding

From: Dale Heatherington <dale@wa4dsy.net>
Date: Mon, 26 Jun 2000 10:59:49 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-93051-2000.06.26-10.23.49--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As I ready a new release of aprsd, I want to make sure I have the Mic-E converter code implimented correctly. There are differences in the way latitude is encoded in two spec documents. The "APRS Mic Encoder Message Formats" from 1997 by Alan Crosswell indicates the latitude is directly encoded in the low nibble of the ax25 destination address eg: xxx0001 = lat digit 1
Alans Mic-E converter code simply ANDs the byte with 0x0F and prints the result as a number, 0..15, and assumes only 0..9 will actually be used.

So, Ascii "1", 0x31 = lat digit 1
and also ASCII "A", 0x41 = lat digit 1
and ASCII "Q", 0x51 = lat digit 1
Unfortunately, ASCII "Z", 0x5A = lat digit 10

The new APRS Spec requires a lookup table.
example:
ASCII "1", 0x31 = lat digit 1
ASCII "A", 0x41 = lat digit 0
ASCII "Q", 0x51 = lat digit 1
And, via table lookup, ASCII "Z", 0x5A = lat digit "SPACE"

Will someone verify that the table on page 42 of the APRS Spec is indeed correct and superceeds the information in the Alan Crosswell document.

--

Dale Heatherington
dale@wa4dsy.net
Web Page <http://www.wa4dsy.net>
Sent by KMail for Linux

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48. [aprsspec] Re: Mic-E Latitude encoding

From: Ian Wade <Ian.Wade@care4free.net>
Date: Mon, 26 Jun 2000 18:24:25 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-93087-2000.06.26-12.28.49--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Dale. Alan's doc is very definitely incorrect.

In article <LYR14779-93051-2000.06.26-10.23.49--Ian.Wade#care4free.net@lists.tapr.org>, Dale Heatherington <dale@wa4dsy.net> writes
>
>As I ready a new release of aprsd, I want to make sure I have the
>Mic-E converter code implimented correctly. There are differences
>in the way latitude is encoded in two spec documents.
>The "APRS Mic Encoder Message Formats" from 1997 by Alan Crosswell

```

>indicates the latitude is directly encoded in the low nibble of the ax25
>destination address
>eg: xxx0001 = lat digit 1
>Alans Mic-E converter code simply ANDs the byte with 0x0F
>and prints the result as a number, 0..15, and assumes only 0..9 will
>actually be used.
>
>So, Ascii "1", 0x31 = lat digit 1

>and also ASCII "A", 0x41 = lat digit 1

```

This is where it falls down. It contradicts his table of latitude/ASCII characters, where "A" is shown to mean lat digit "0". Nobody spotted this before, because the original Mic-E units did not support Custom messages.

```

>and ASCII "Q", 0x51 = lat digit 1
>Unfortunately, ASCII "Z", 0x5A = lat digit 10

```

And this is what caused all the confusion recently over position ambiguity!

```

>
>The new APRS Spec requires a lookup table.

```

It doesn't actually *require* a lookup table. I intentionally introduced a lookup table because of all the confusion in Alan's doc, to purge from peoples' minds the idea that the least significant nibble always equates to the latitude digit. You obviously can still implement it by masking the least significant nibble, but you have to remember to subtract 1 if the letter is in the range A-J, and you have to remember to handle the position ambiguity characters K, L and Z specially. If you look at <APRSdec>, you'll see that the use of a table makes it bombproof, and faster.

```

>example:
>ASCII "1", 0x31 = lat digit 1
>ASCII "A", 0x41 = lat digit 0
>ASCII "Q", 0x51 = lat digit 1
>And, via table lookup, ASCII "Z", 0x5A = lat digit "SPACE"
>
>Will someone verify that the table on page 42 of the APRS Spec is indeed
>correct and superceeds the information in the Alan Crosswell document.
>

```

All of this caused me a lot of pain in verifying that the latest spec is correct. I have checked *many* live reports from IGate logs, and also from local on-air packets, to verify that the table in the latest spec is correct.

P.S. Alan's doc is also wrong in the table of latitude/ASCII characters, in that the headings on the "Message/N/W/L Bit=0" and "Message/N/W/L Bit=1" columns are transposed. This caused me a *big* headache when I started looking into this. Again, extensive checking of on-air packets proved that the table headings were indeed the wrong way round.

>

73
 Ian, G3NRW
 Technical Editor, APRS Protocol Specification

```

--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@arrl.net |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.netro.co.uk/aprs.htm |
+-----+

```

```

---
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```

49. [aprsspec] leave-aprsspec-11602B@lists.tapr.org

From: kf4chg <kf4chg@atlantic.net>
Date: Tue, 27 Jun 2000 06:32:59 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-93293-2000.06.27-05.35.44--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

leave-aprsspec-11589P@lists.tapr.org
[Attachment: kf4chg.vcf; text/x-vcard; 308 bytes]

50. [aprsspec] aprs.net 10151

From: John Rothert <rothertj@digital.net>
Date: Fri, 30 Jun 2000 15:04:20 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-94170-2000.06.30-14.09.59--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What has happen to the APRServe Network - Southern Florida (aprs.net 10151). Yesterday afternoon it seemed to go down and I have not been able to connect since. The only site I can TCP too is WD4DSY in Atlanta.

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July 2000

Original source file: aprsspec.0007

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprsspec/mail_archive/aprsspec.0007

1. [aprsspec] Authentication?

From: "Curt, WE7U" <archer@eskimo.com>
Date: Fri, 7 Jul 2000 16:44:29 -0700 (PDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "Curt Mills, WE7U" <BowHunter@mail.com>,
"Curt Mills, WE7U" <hacker@tc.fluke.com>
Message-ID: <LYR11589-95324-2000.07.07-18.49.09--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What options currently exist for authentication?

I'd like a program that I'm writing to cooperate with other software (like aprsd). I'd rather not call an external module for authentication, but I believe some of the APRS programs out there do just that.

This program is written in Perl 5 if that makes a difference. I don't care about license authentication, just authentication to gate the user's packets to RF.

Curt, WE7U BowHunter@mail.com
Arlington, WA, USA <http://www.eskimo.com/~archer>
"Lotto: A tax on people who are bad at math." -- unknown
"Windows: Microsoft's tax on computer illiterates." -- WE7U

You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

2. [aprsspec] Waether station

From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>
Date: Wed, 12 Jul 2000 07:51:47 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-96091-2000.07.12-06.53.05--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi to all,

I'm part fo the VE2ETS club in Montreal, and help maintain the IGATE in Montreal. The club has had a weather station project for about a year now and is near completion. Note that it is a homebrew station that will get acquisition on a PC. Since APRS supports weather information, I Thought that it would be nice to post the information to APRS.

I'm also in a project to help with the aprsd program (as some may already know). After looking the weather section in the APRSSPEC document available on the TAPR site (needed for the proect), I found that in the weather packet, their is one bit for the source of the information, i.e. Win/MacAPRS and other choice, but I failed to find an IGATE as a possible source.

Few Question :

- 1- Is their any IGATE operator that have a weather station.
- If so how do you do it for packet forming
- 2- If no operator, How can I form the packet.

The second question is a consequence to the other so just please answer either one...

Thanks in advance

Bruno Quesnel bruno.quesnel@mindready.com
VA2BMG quesnelb@ve2.ele.etsmtl.ca
Stagiaire - MindReady Solutions
Solutions Mindready Inc. tel.: 514-636-6886 ext 5171
2196 32ieme Avenue
Lachine (Quebec)H8T 3H7

3. [aprrspec] We getting there?

From: Cap Pennell <cap@cruzio.com>
Date: Wed, 12 Jul 2000 06:47:48 -0700
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-96108-2000.07.12-08.53.15--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

APRS Spec 101m - May 1st, 2000

Not meaning to nag, Ian, but I'm curious. How's it coming along?
73, Cap KE6AFE

--

Cap Pennell KE6AFE
Santa Cruz, CA 95062-1002 3658.93N/12200.91W [CM86xx]
email: ke6afe@arrl.net home page: <http://members.cruzio.com/~cap>
packet radio: KE6AFE @ki6eh.#wcca.ca.usa.noam

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To unsubscribe send a blank email to leave-aprrspec-11589P@lists.tapr.org

4. [aprrspec] Re: Waether station

From: Dale Heatherington <dale@wa4dsy.net>
Date: Wed, 12 Jul 2000 09:43:30 -0400
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-96109-2000.07.12-08.55.16--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

More than a year ago I started injecting weather data into aprs
and ran into the same problem. My weather station is completely
home made and the software is a mixture of custom Java pgm doing the data collection
and aprsd doing the aprs data communication.
I just used "L" for the software type (L=Linux) and "dsy" (last 3 letters of my call)
for the weather station. No one has complained so far.

Maybe there needs to be an official code for "custom made" weather station hardware and software.

On Wed, 12 Jul 2000, you wrote:

>
> Hi to all,
>
> I'm part fo the VE2ETS club in Montreal, and help maintain
> the IGATE in Montreal. The club has had a weather station
> project for about a year now and is near completion. Note that
> it is a homebrew station that will get acquisition on a PC.
> Since APRS supports weather information, I thought that it would
> be nice to post the information to APRS.
>
> I'm also in a project to help with the aprsd program (as some
> may already know). After looking the weather section in the
> APRSSPEC document available on the TAPR site (needed for the
> proect), I found that in the weather packet, there is one bit for
> the source of the information, i.e. Win/MacAPRS and other choice,
> but I failed to find an IGATE as a possible source.
>
> Few Question :
>
> 1- Is their any IGATE operator that have a weather station.
> If so how do you do it for packet forming
> 2- If no operator, How can I form the packet.
>
> The second question is a consequence to the other so just
> please answer either one...
>
> Thanks in advance
>
> --
> Bruno Quesnel
> VA2BMG
> Stagiaire - MindReady Solutions
> Solutions Mindready Inc.
> 2196 32ieme Avenue
> Lachine (Quebec)H8T 3H7
>
>
>
bruno.quesnel@mindready.com
quesnelb@ve2.ele.etsmtl.ca
tel.: 514-636-6886 ext 5171

Content-Type: text/html; name="unnamed"
Content-Transfer-Encoding: 7bit
Content-Description:

--
Dale Heatherington
dale@wa4dsy.net
Web Page <http://www.wa4dsy.net>
Sent by KMail for Linux

You are currently subscribed to aprsspec as: lyris.aprsspec@tapr.org
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5. [aprsspec] Re: [aprssig] Re: Findu-wrong status

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Thu, 13 Jul 2000 06:11:29 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRSdev" <aprssdev@lists.tapr.org>, "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-96325-2000.07.13-08.17.06--lyris.aprsspec@lists.tapr.org>
Rendered body type: text/plain

Perhaps, we could just append a checksum on all APRS packets. With Position and Status packets, appending a NMEA style "*XX" would not affect older programs ability to see the packets. Message packets might be a problem, perhaps, add it to the text portion of the packet, before the message number and reply/ack. I'd bet weather and telemetry would work with older programs.

The status packet:

>111325z[199YD]APRS is "RAD"IO

would be come

>111325z[199YD]APRS is "RAD"IO*30

Message packet:

WB4APR :Test message{01}
to
WB4APR :Test message*05{01}
The checksum including everything but the message numbers.

It would offer some assurance of validity to the received packet. Something that is currently lacking in the APRS protocol.

Brent KH2Z

----- Original Message -----
From: Steve Dimse <k4hg@tapr.org>
To: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>
Sent: Thursday, July 13, 2000 5:18 AM
Subject: [aprssig] Re: Findu-wrong status

> On 7/13/00 3:03 AM David Aitcheson - KB3EFS (cdjintl@clark.net) wrote:
>
> >Yep!
> >
> >Check out <http://64.34.101.121/cgi-bin/find.cgi?K3RAM-1>
> >
> >That is the digi at K3RAM; not some EOC.
> >
> >The only other one that people had brought to my attention was the result
> >of a mangled packet. This one is caused by this packet:
> >
> >K3RAM-1>WIDE,WIDE,APR813,WN2IPH-15,BEACON:>041907zCumb.Cnty EOC
> >WIDE/RELAY n2iph@qsl.net
> >
> >It was received by findu on May 2 at 025148z. It is a perfectly valid
> >appearing status packet that was sent to the APRS stream. It may be the
> >perfect cojoining of two packets or someone may have accidentally
> >generated garbage, but since it appeared on the stream, findu is correct
> >in displaying it.
> >
> >What I am doing is clearing all the status packets older than July 1,

> which will get rid of this. There is a lot more garbage on the data
> stream since I stopped policing it, and until someone takes over active
> management and generates a new validations scheme, there will be a lot of
> these sort of occurrences.
>
> Steve K4HG
>
> ---
> You are currently subscribed to aprssig as: bhildebrand@earthlink.net
> To unsubscribe send a blank email to leave-aprssig-67575@lists.tapr.org
>
>

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org

6. [aprsspec] Re: [aprssig] Re: Findu-wrong status

From: Bill Diaz <billdiaz@megsinet.net>
Date: Thu, 13 Jul 2000 08:27:40 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRSdev <aprsdev@lists.tapr.org>,
APRS Spec Discussion List
<aprsspec@lists.tapr.org>
Message-ID: <LYR11589-96328-2000.07.13-08.32.50--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brent

I agree 100%. Presently, the integrity of data on the Internet feed is questionable. Mangled packets abound. One of the primary advantages of your proposal would be greatly simplified dupe checking. Checksums could be optional and handled in much the same manner as NMEA packets.

Why couldn't a checksum be added after the message number or ack in messages?

Bill KC9XG

On Thursday, July 13, 2000 8:11 AM, Brent Hildebrand
[SMTP:bhildebrand@earthlink.net] wrote:

> Perhaps, we could just append a checksum on all APRS packets. With Position
> and Status packets, appending a NMEA style "*XX" would not affect older
> programs ability to see the packets. Message packets might be a problem.
> perhaps, add it to the text portion of the packet, before the message number
> and reply/ack. I'd bet weather and telemetry would work with older programs.
>
>

> The status packet:

> >111325z[199YD]APRS is "RAD"IO

> would be come

> >111325z[199YD]APRS is "RAD"IO*30

> Message packet:

> WB4APR :Test message{01}

> to

> WB4APR :Test message*05{01}

> The checksum including everything but the message numbers.

> It would offer some assurance of validity to the received packet. Something
> that is currently lacking in the APRS protocol.

> Brent KH2Z

> ----- Original Message -----

> From: Steve Dimse <k4hg@tapr.org>

> To: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>

> Sent: Thursday, July 13, 2000 5:18 AM

> Subject: [aprssig] Re: Findu-wrong status

>

>

> > On 7/13/00 3:03 AM David Aitcheson - KB3EFS (cdjintl@clark.net) wrote:

> >

> > >Yep!

> > >

7. [aprsspec] Re: [aprssig] Re: Findu-wrong status

8. [aprsspec] Re: [aprssig] Re: Findu-wrong status

Page 636

Rendered body type: text/plain

On Thu, 13 Jul 2000, Steve Dimse wrote:

```
> On 7/13/00 9:11 AM Brent Hildebrand (bhildebrand@earthlink.net) wrote:
>
> >Perhaps, we could just append a checksum on all APRS packets. With
> >Position and Status packets, appending a NMEA style "**XX" would not affect
> >older programs ability to see the packets. Message packets might be a
> >problem, perhaps, add it to the text portion of the packet, before the
> >message number and reply/ack. I'd bet weather and telemetry would work
> >with older programs.
> >
> But the problem is where do you add the checksum?
```

Adding it ANYWHERE would be a start. Bit errors can occur at all stages. Let's attack it where we can. This certainly sounds like a good candidate for a "recommended" option for the 2nd version of the protocol.

How about a CRC-16 checksum (or better) instead of the NMEA-style. Better at catching certain types of errors. Making it optional is good. We could migrate to the new system over a period of years.

I haven't a clue how to shoehorn it into the current protocol. I certainly wouldn't mind burning new firmware for my systems to get checksums added.

Curt Mills, WE7U hacker.NO_*SPAM@tc.fluke.com
Senior Methods Engineer/SysAdmin
"Lotto: A tax on people who are bad at math." -- unknown
"Windows: Microsoft's tax on computer illiterates." -- WE7U

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9. [aprsspec] Re: [aprssig] Re: MIC-E duplicate packets

From: "Brent Hildebrand" <bhildebrand@earthlink.net>
Date: Sat, 15 Jul 2000 07:00:57 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-96693-2000.07.15-09.05.43--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here is some data taken from the Internet feed today.

KB2WQM-9>APK001:@151441z3911.00N/07444.93W[000/000/Mic-E/M4/Committed>kb2wqm@amsat.org

KB2WQM-9>3YQQ0Q:`fHzl []/>kb2wqm@amsat.org

KB2WQM-9>APRS:@151338z3911.00N>07444.93W/063/000/Mic-E/M4/Committed>kb2wqm@amsat.org

KB2WQM-9>APRS:@151337z3911.01N/07444.94W[000/000/T>dsy/M4/Committed.
kb2wqm@amsat.org

KB2WQM-9>APK:@151337z3911.01N/07444.94W[000/000/TH-D7/M4/COMMITTED>kb2wqm@amsat.org

NOTE: There are 4 separate conversions. 2 by WinAPRS, 1 by APRS+SA and 1 by APRSD. The Mic-E packet is shown, but probably is not faithfully reproduced by my Email program.

Packet 1: WinAPRS. The to field is APK001. This is true even for D700 radios which use APK101. The origin is stated to be Mic-E, but in fact, is TH-D7, a Mic-E variant. The time is way off compared to the other packets below

Packet 2: The Mic-E packet.

Packet 3: Origin? I suspect winAPRS. Note that the Icon is encoded incorrectly.

Packet 4: APRSD conversion. The origin is stated to be T>dsy. Was it TH-D7 or TM-D7? This is lost. Icon is OK.

Packet 5: This was converted by APRS+SA. TO field is APK, meaning Kenwood.

The origin is the TH-D7. Icon is OK, Lat/Long agree with APRSD. Even the TIME was the same.

This is an impossible situation to remove duplicates. Lat/Long are different by .01 minute. Not significant when plotting on a map, but hard to figure out when removing duplicates. TIME, while packet 1 has reasonable Lat/Long and correct Icon, the time is vastly different than packets 3,4 and 5. Packets 3 is just plain fubar with respect to Icon. Packets 4 and 5 agree very closely. But deduping? Arrgh.

Conclusions:

Mic-E data is all messed up. Clearly, converting Mic-E to a "standard" APRS packet is not working. One solution is converting the Internet side to APRSD. This could be a hardship for Mac owners running APRServe. This would still require that ALL client programs be updated to remove the Mic-E conversion code. What should be done???

Brent KH2Z

----- Original Message -----

From: "Dale Heatherington" <dale@wa4dsy.net>

To: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>

Sent: Friday, July 14, 2000 4:21 PM

Subject: [aprssig] Re: MIC-E duplicate packets

> Ok, show of hands: Which APRS programs that connect to the internet
> can't pass the 5 unprintable Mic-E characters either on RX or TX, yet can
> deal with them to/from the TNC?
>
> Which programs can't deal with raw MIC-E packets and need to
> see the converted form?
>
> aprsd has no trouble with these and could pass Mic-E packets in their
> original format. Mild side effect: The current dup checker does not look
at the ax25 destination
> so would ignore that field even though it's part of MIC-E data. Maybe
could be handled special....
>
> On Fri, 14 Jul 2000, you wrote:
> >
> > First, I agree, if we convert, then do not send the original. Second,
APRSD
> > should not be converting packets unless it heard them on RF. Conversion
is
> > the sole responsibility of the hearing station. Lastly, we should have
a
> > mechanism to pass the original packet through and never do a false
> > conversion. This has been discussed before, and I believe can easily
solved
> > by using any of the standard Internet encoding schemes. We would then
see
> > the actual original data as it was transmitted.
> >
> > Brent KH2Z
> >
> --
> Dale Heatherington
> dale@wa4dsy.net
> Web Page <http://www.wa4dsy.net>
> Sent by KMail for Linux
>
> ---
> You are currently subscribed to aprssig as: bhildebrand@earthlink.net
> To unsubscribe send a blank email to leave-aprssig-67575@lists.tapr.org
> Questions regarding the SIG go to the SIG administrator: wallou@tapr.org
>
>

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

10. [aprsspec] Re: [aprssig] Re: MIC-E duplicate packets

From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>
Date: Sat, 15 Jul 2000 12:22:48 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-96708-2000.07.15-11.27.34--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brent Hildebrand wrote:

>
> This is an impossible situation to remove duplicates. Lat/Long are
> different by .01 minute. Not significant when plotting on a map, but hard
> to figure out when removing duplicates. TIME, while packet 1 has
> reasonable Lat/Long and correct Icon, the time is vastly different then
> packets 3,4 and 5. Packets 3 if just plain fubar with respect to Icon.
> Packets 4 and 5 agree very closely. But deduping? Arrgh.
>
> Conclusions:
> Mic-E data is all messed up. Clearly, converting Mic-E to a "standard"
> APRS packet is not working. One solution is converting the Internet side to
> APRSD. This could be a hardship for Mac owners running APRServe. This
> would still require that ALL client programs be updated to remove the Mic-E
> conversion code. What should be done???
>
> Brent KH2Z

Since so many program exist, it's pretty hard to get every body on the same
foot to dance...

In my opinion, any "presentation" program (program taht presents the packet on
a map graphically) that can connect both on a serial port for RF info and onto
the internet, should be the one to convert the packets, which they already do.

The IGATE should only be there to pass information that they hear on the RF
(whichever way to listen) and render these packet onto the internet for other
to come and get. Even if the IGATE keeps the conversion capabilities, onely
one side of the fence should do it.

When this is done, packet dups whould be reduced, on the internet side
anyway... Also an important point is to get the proper "standard" implemented
in whichever program so that no confusion occurs.

--

Bruno Quesnel	va2bm@videotron.ca
Genie Electrique	quesnelb@ve2.ele.etsmtl.ca
Electrical Engineering	VA2BMG
Ecole de Technologies Superieure	http://www.findu.com/cgi-bin/find.cgi?va2bm

11. [aprsspec] Mangled headers

From: Bill Diaz <billdiaz@megsinet.net>
Date: Sat, 15 Jul 2000 20:29:03 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-96787-2000.07.15-20.34.08--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Does anyone know what causes these mangled headers?
Looks like an improper conversion of AEA Display format.

```
!209.140.206.200:W1AW ProcessHeader error N1NOM-12!N1NOM-12>WIDE
<UI,GP5LJ,N1QPR-2,W1LOU-15*:$GPGLL,4223.675,N,07134.010,W,214014,A*39
!209.140.206.200:W1AW ProcessHeader error KA1PRN!KA1PRN>WIDE3-3
<UI,APW227,W1GTT-2*:_07160250c105s012g015t067r017p019p019h99b10101wDAV
!209.140.206.200:W1AW ProcessHeader error W1AAA-15!W1AAA-15>WIDE3-3
<UI,BEACON:!4127.78NN07214.49W#PHG7560 Salem, CT
!209.140.206.200:W1AW ProcessHeader error W1AAA-15!W1AAA-15>WIDE3-3
<UI,APRS:14127.78NN07214.49W#PHG7560 Salem, CT E.O.C. APRS Digipeater
!205.148.193.163:N5FAZ-2 Data error!=3147.16N/10622.91WIPHG2130/paul
faz@dzn.com -TXELPELPASO -330-<062>
```

Bill KC9XG

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12. [aprsspec] APRS Symposium at DCC

From: Steve Dimse <sdimse@earthlink.net>
Date: Sun, 16 Jul 2000 09:19:57 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-96843-2000.07.16-08.25.55--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Once again it is time to start planning for the APRS Symposium at the Digital Communication Conference. It will be held Friday, Sept 22, 2000 in Orlando. More info on the conference is available at

<http://www.tapr.org/dcc>

This is as close as APRS comes to a national convention, past years have drawn most of the movers and shakers within APRS. If you love APRS, you'll love the Symposium!

The APRS Symposium will run roughly from 1PM to 7PM, exact times to be determined. Undoubtably the usual suspects will be presenting, but I especially want to encourage people that haven't presented before to do so.

Anyone (including the usual suspects, I will not chase you down this year) that will be there and wishes to present should notify me within the next week, including the topics you wish to present and the amount of time you would like.

If you aren't going to DCC but have something to share, consider submitting it for publication in the proceedings anyway, it is a good way to get information published. Deadline is August 7, details on submission are available at the above DCC web site.

See you there!

Steve K4HG

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

13. [aprsspec] Internet Gating

From: "Darryl Smith" <darryl@radio-active.net.au>
Date: Tue, 18 Jul 2000 06:27:18 +1000
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-97095-2000.07.17-15.26.17--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

G'Day All,

Simple question on inetnet gating: Should packets that have been forwarded from the internet to RF ever be forwarded back to the internet?

For Example

VK2TDS -> INTERNET -> VK2HDJ -> RF -> VK2XGJ -> INTERNET

Should this never happen... It would make network design much easier

Darryl

Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia
Mobile Number 0412 929 634 [+61 4 12 929 634 International]
Darryl@radio-active.net.au | www.radio-active.net.au for domain names

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To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapr.org
Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

14. [aprsspec] Re: Internet Gating

From: Steve Dimse <sdimse@earthlink.net>
Date: Mon, 17 Jul 2000 16:30:02 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-97096-2000.07.17-15.35.28--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 7/17/00 4:27 PM Darryl Smith (darryl@radio-active.net.au) wrote:

>Simple question on intnetnet gating: Should packets that have been forwarded
>from the internet to RF ever be forwarded back to the internet?
>

No, but even if they are they are filtered out by aprsd and APRServe.

Steve K4HG

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15. [aprsspec] 19th Annual ARRL and TAPR Digital Communications Conference

From: Stan Horzepa <stanzepa@mail2.nai.net>
Date: Tue, 18 Jul 2000 21:20:43 +0000
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-97266-2000.07.18-20.27.39--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Press Release: July 6th, 2000

19th Annual ARRL and TAPR Digital Communications Conference

2000 ARRL and TAPR Digital Communications Conference
September 22-24, 2000
Orlando, Florida

It is that time again! Time to start making your travel plans and thinking about what to publish for the upcoming 19th Annual ARRL and TAPR Digital Communications Conference.

The ARRL and TAPR Digital Communications Conference is an international forum for radio amateurs in digital communications, networking, and related technologies to meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. The Digital Communications Conference is not just for the digital expert, but for digitally-oriented amateurs of all levels of experience.

The 2000 ARRL and TAPR Digital Communications Conference will be held September 22-24, 2000 in Orlando, Florida. This year's conference location is just minutes away from the Orlando International Airport (MCO).

Not only is the Digital Communications Conference technically stimulating, it is a weekend of fun for all who have more than a casual interest in any of the ham digital communications modes. This includes networkers, sysops, software writers, modem designers, and digital satellite communications enthusiasts. The ARRL and TAPR Digital Communications Conference is for all levels of digital operators -- a must conference to attend to get active on a national level. Now, more than ever, amateur radio needs this great meeting of the minds, since it is important that we demonstrate a continued need for the frequency allocations we now have by pushing forward and documenting our achievements. The ARRL and TAPR Digital Communications Conference is one of the few ways to record our accomplishments and challenge each other to do more.

Area Attractions

The Orlando Florida area is famous for its attractions and vacation spots. Disney World, Universal Studios, and Sea World (just to name a few) are within 15 minutes of the hotel. Shuttle service from the hotel will be available for a small fee. Cape Canaveral and Cocoa Beach are a 30 minute drive East of the hotel.

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16. [aprsspec] APRS Symposium at DCC

From: Steve Dimse <sdimse@earthlink.net>
Date: Wed, 19 Jul 2000 10:26:29 -0400

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-97378-2000.07.19-09.32.25--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Anyone (including the usual suspects, I will not chase you down
>this year) that will be there and wishes to present should notify
>me within the next week, including the topics you wish to present
>and the amount of time you would like.

So far, with half the week gone, I have gotten requests from only these people:

The Sproul Brothers
John Hansen
Tom Schaefer
John Blowsky
Darryl Smith

If you are going to be at the DCC and wish to talk at the APRS symposium, you must let me know in the next few days. Please include the topic and the length of time you would like.

APRS AUTHORS TAKE NOTE

I am not chasing people down, if I don't hear from you by Sunday I will presume you do not wish to present. There are simply too many authors now for me to do this individually...

Everyone else take note

I'd love to see more of you presenting!

Thanks,

Steve K4HG

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

17. [aprsspec] Re: [aprssig] RE: APRS & PSK31

From: Jeff King <jeff@aerodata.net>
Date: Thu, 20 Jul 2000 20:48:04 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>, aprsspec@lists.tapr.org
Message-ID: <LYR11589-97691-2000.07.20-19.50.50--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob Bruninga wrote:

> My thoughts are you simply look at the data. If you see something like
> this:
>
> de WB4APR @FM18SX

> then you interpret the FM18SX as a grid square and plot him. Nothing
> more. Im not suggesting using PSK31 for APRS at all.

I don't understand this, you say your not suggesting using PSK31 for APRS yet your saying you interpret FM18SX as a grid square and plot it. The implication here is you plot on a computer map.... or are you just suggesting using paper?

Assuming the former, lets look at your suggesting for plotting position using grid squares:

... de WB4APR @FM18SX...

Looks good, but without understanding how varicode works its far to verbose. Seems strange to say this, but with PSK31 we don't have the luxury of 1200 baud.... the data stream is only 31bps. Maybe a link to the theory of varicode would be helpful:

<http://www.kender.es/~edu/psk31theory.html#Information> Coding

OK, so lets look at how long your example is:

de WB4APR @FM18SX which is 17 chars including the de, space and delimiter.

Now, transcribing this to varicode we get the following (bit length under char)

d	e	_	W	B	4	A	P	R	_	@	F	M	1	8	S	X
6	2	1	9	8	8	7	8	8	1	10	8	8	8	9	7	9

for a total of 117 bits + (16*2 sync bits) = 149 bits @31bps = 4.8 seconds
to send a very ambiguous posit that is not very computer friendly.

another way to do it would be as follows and could be part of the PSK31
ID string delimited as follows:

<call in lower case><aprs delimiter><lat><lon><optional checksum>
example for lat 39.0858, lon 763601 (note "_" is space):

wb4apr-ts_rarln_tn_e (see conversion table below)

Now, transcribing this to varicode we get the following (bit length under char)

w	b	4	a	p	r	-	t	s	_	r	a	r	l	n	t	n	_	e
7	7	8	4	5	5	6	3	5	1	5	4	5	5	4	3	4	1	2

for a total of 84 bits plus (18*2 sync bits) = 122 bits @31bps = 3.9 seconds.
A ~19% savings in air time giving a precise posit that is very computer
friendly. This could be a standard ID frame that is sent with each station.

here is the conversion table:

Char	bit pattern	Could be?
SPACE	1	0
e	11	1
o	111	2
t	101	3
i	1101	4
a	1011	5
n	1111	6
l	11011	7
r	10101	8
s	10111	9

Now, taking this a step further, we could go with base100 for our
lat/lon and save those two bits for sync on the lat lon chars (as
we are going from 12 chars to 6). We offset with 32 then take the
four smallest varicodes from under 32 as 0-3 (all varicodes under
32 are 10 bit) and this gives us a average varicode length of
about 8.

So we could have something like this for lat 39.0858, lon 76.3601

wb4apr-C\$Vh@<LF>

Now, transcribing this to varicode we get the following (bit length under char)

w	b	4	a	p	r	-	C	\$	V	h	@	<LF>
7	7	8	4	5	5	6	8	9	9	6	10	5

for a total of 89 bits plus (12*2 sync bits) = 113 bits @31bps = 3.6 seconds
which is a 25% savings in air time.

Now, I haven't consider the ones place or sign for either lon or lat, but this
could be delt with in the delimiter field.

The advantages are:

1. A easily machine parsable format
2. Far more precise location then "grid squares"
3. A significant savings in air time.

Give it some thought.

-Jeff

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18. [aprsspec] Re: [aprssig] RE: APRS & PSK31

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 21 Jul 2000 13:56:37 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: TAPR APRS Special Interest Group <aprssig@lists.tapr.org>, aprsspec@lists.tapr.org
Message-ID: <LYR11589-97817-2000.07.21-13.01.46--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeff,

I am approaching a merging of APRS display technology from the perspective of the existing PSK31 user base. Look at any PSK31 QSO. They already use GRID SQUARES. SO parsing and displaying that in APRS is a natural, and can be done NOW and requires NO CHANGE IN existing operator technique. You do it on receipt... THUS you can begin plotting people NOW.

Your unique selection of varicode characters can save 19% over a "grid square" but I bet you will never convince anyone to use it. And it must be implemented by all SENDERS before it has any value. Good luck...

You are trying to optimize around "computer friendly". I am trying to optimize around "user friendly" and taking advantage of existing use...

On Thu, 20 Jul 2000, Jeff King wrote:

> > Bob suggested parsing: de WB4APR @FM18SX
>
> > ... as a grid square and plot him. Nothing more simpler than that.
> Looks good, but without understanding how varicode works its far to verbose.

I understand how varicode works. I also understand how operators work and how they are already using gridsquares and they could care less about changing just so us APRS people can plot them...

> Now, transcribing this to varicode... 117 bits ... or.. 4.8 seconds to
> send a very ambiguous posit that is not very computer friendly.

Not ambiguous at all when you consider that PSK31 is being used on HF, Internationally. The Grid plots the guy to within less than 2 miles in most areas of the world and is well close enough for an HF DX contact in my thinking...

> [ALTERNATELY consider:] wb4apr-ts_rarlnn_e
>
> Now, transcribing this to varicode we get 84 bits for 3.9 seconds.
> A ~19% savings in air time...

Savings? You saved 0.9 seconds in a 1 minute long transmission...

> giving a precise posit that is very computer friendly.

PSK31 does not need to be computer friendly at all. With its VERY precious bandwidth, it needs to be MAXIMALLY *user friendly*. With the computer power we have today, we should make the computers work for US, not make us REDEFINE HAM radio QSOs so the "computer" is happy...

> Now, taking this a step further...: wb4apr-C\$Vh@<LF>
> ...ranscribing this to varicode we get a 25% savings in air time.

No, you get another 0.3 seconds saved in a 1 minute QSO... Savings?

> The advantages are:
> 1. A easily machine parsable format
> 2. Far more precise location then "grid squares"
> 3. A significant savings in air time.

Ah, BUT... DISADVANTAGES:

1. No one will use it.

> Give it some thought...

I already did a year ago and suggested something like it to Peter Martinez back then, but we both concluded it wouldnt fly. Grids are already in use. We use them in APRS too, so it just seemed like the logical way to go...

It is very easy to write a parser that can recognize a GRID SQUARE just about anywhere in free form TEXT. APRSdos, WinAPRS and APRS+SA and maybe others already have such algorithms..

bob

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19. [aprsspec] Re: [aprssig] RE: APRS & PSK31

From: "Thomas M. Schaefer" <toms@inconnect.com>
Date: Fri, 21 Jul 2000 12:34:49 -0600
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>,
<aprsspec@lists.tapr.org>
Message-ID: <LYR11589-97822-2000.07.21-13.38.59--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeff, Bob, et al...

I tend to agree with Bob on this one. I say that fully understanding the ramifications of even uppercase characters in varicode. This is not intended to be a system to replace what goes on HF packet. My idea was so that when someone is out in the field, they can send a message or a posit back via PSK31 because with a mobile rig and a computer, I think I can get into the network better on PSK31. If we talk about 1 watt, a battery, and a dipole, the odds of success over HF packet go even higher. Perhaps, my approach of a PSK31-based mail exchange system is different than just a posit-type system. Remember that my idea was to put a macro in an existing program like Digipan. If we make the data computer-friendly, then no one will be able to put it in Digipan.

Tom NY4I

----- Original Message -----

From: "Bob Bruninga" <bruninga@nadn.navy.mil>
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>,
<aprsspec@lists.tapr.org>
Sent: Friday, July 21, 2000 11:56 AM
Subject: [aprsspec] Re: [aprssig] RE: APRS & PSK31

> Jeff,
> I am approaching a merging of APRS display technology from the perspective
> of the existing PSK31 user base. Look at any PSK31 QSO. They already use
> GRID SQUARES. SO parsing and displaying that in APRS is a natural, and
> can be done NOW and requires NO CHANGE IN existing operator technique.
> You do it on receipt... Thus you can begin plotting people NOW.
>
> Your unique selection of varicode characters can save 19% over a "grid
> square" but I bet you will never convince anyone to use it. And it must
> be implemented by all SENDERS before it has any value. Good luck...
>
> You are trying to optimize around "computer friendly". I am trying to
> optimize around "user friendly" and taking advantage of existing use...
>
> On Thu, 20 Jul 2000, Jeff King wrote:
>
> > Bob suggested parsing: de WB4APR @FM18SX
> >
> > ... as a grid square and plot him. Nothing more simpler than that.
> >
> > Looks good, but without understanding how varicode works its far to
> verbose.
>
> I understand how varicode works. I also understand how operators work and
> how they are already using gridsquares and they could care less about
> changing just so us APRS people can plot them...
>
> > Now, transcribing this to varicode... 117 bits ... or.. 4.8 seconds to
> > send a very ambiguous posit that is not very computer friendly.
> >
> > Not ambiguous at all when you consider that PSK31 is being used on HF,
> > Internationally. The Grid plots the guy to within less than 2 miles in
> > most areas of the world and is well close enough for an HF DX contact in
> > my thinking...
>

```

> > [ALTERNATELY consider:]      wb4apr-ts_rarIntn_e
> >
> > Now, transcribing this to varicode we get 84 bits for 3.9 seconds.
> > A ~19% savings in air time...
>
> Savings? You saved 0.9 seconds in a 1 minute long transmission...
>
> > giving a precise posit that is very computer friendly.
>
> PSK31 does not need to be computer friendly at all. With its VERY
> precious bandwidth, it needs to be MAXIMALLY *user friendly*. With the
> computer power we have today, we should make the computers work for US,
> not make us REDEFINE HAM radio QSOs so the "computer" is happy...
>
> > Now, taking this a step further...:      wb4apr-C$Vh<LF>
> > ...ranscribing this to varicode we get a 25% savings in air time.
>
> No, you get another 0.3 seconds saved in a 1 minute QSO... Savings?
>
> > The advantages are:
> > 1. A easily machine parsable format
> > 2. Far more precise location then "grid squares"
> > 3. A significant savings in air time.
>
> Ah, BUT... DISADVANTAGES:
>
> 1. No one will use it.
>
> > Give it some thought...
>
> I already did a year ago and suggested something like it to Peter Martinez
> back then, but we both concluded it wouldnt fly. Grids are already in
> use. We use them in APRS too, so it just seemed like the logical way to
> go...
>
> It is very easy to write a parser that can recognize a GRID SQUARE just
> about anywhere in free form TEXT. APRSdos, WinAPRS and APRS+SA and maybe
> others already have such algorithms..
>
> bob
>
>
>
>
> ---
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> Questions regarding the SIG go to the SIG administrator: wallou@taprr.org
>

```

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20. [aprsspec] Re: [aprssig] RE: APRS & PSK31

```

From: Jeff King <jeff@aerodata.net>
Date: Fri, 21 Jul 2000 15:42:32 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.taprr.org>
Cc: TAPR APRS Special Interest Group <aprssig@lists.taprr.org>,
    aprsspec@lists.taprr.org
Message-ID: <LYR11589-97828-2000.07.21-14.46.21--lyris.aprsspec#taprr.org@lists.taprr.org>
Rendered body type: text/plain

```

Bob Bruninga wrote:

```

> I am approaching a merging of APRS display technology from the perspective
> of the existing PSK31 user base.

```

Which is fine. But I was approaching it from the perspective of the APRS user base.... tracking assets. I have little interest in HF chit chatting but if one can bootstrap off existing technology to enhance amateur AVL, which is my interest, then I think we should.

```

> Look at any PSK31 QSO. They already use
> GRID SQUARES. SO parsing and displaying that in APRS is a natural, and
> can be done NOW and requires NO CHANGE IN existing operator technique.
> You do it on receipt... THus you can begin plotting people NOW.

```

Why can't we do both then? I'm interested in tracking assets, not peoples houses. As such, I need to target platforms that will support this. A laptop in a vehicle is not practical in all applications. However, a PIC processor is. And there already is open source PSK31 code out for the PIC. Sure, I could send grid squares with the PIC, but gezz, how big would the look-up table be? I'd have to relate lat/long to every grid square. Why not just make life easier for everyone and just send lat/lon as that's what the GPS gives me?

> Your unique selection of varicode characters can save 19% over a "grid square" but I bet you will never convince anyone to use it. And it must > be implemented by all SENDERS before it has any value. Good luck...

Actually, I was trying to convince you to look at the big picture here since we have a relatively clean slate. I'm not saying not to use grid squares, I was suggesting a alternate method that allowed the use of a GPS to track assets using a minimal processor. As a side benefit, it could be more compact then grid squares, easier to parse and more precise.

Bob, I don't understand your resistance here.... you have what, four or five different ways to say the same thing on AX.25 aprs?!? I was throwing some ideas out here and thought I could get some dialog on the issue... so far I've gotten one guy arguing the merits of RTTY over PSK31 and now you shooting the idea down before it even gets out the gate. I think what I had was a very good way to use PSK31 to track assets..... yes I should code something up, but that shouldn't curtail intelligent conversation on the subject.

> You are trying to optimize around "computer friendly". I am trying to > optimize around "user friendly" and taking advantage of existing use...

Yes, guilty on all counts.. I don't care at all about existing use.... I'll use the internet to chat with someone sitting at their house. What I was interested in was bootstrapping a existing technology into tracking mobile assets. Seemed like a good fit to me.

> > Looks good, but without understanding how varicode works its far to verbose.
>
> I understand how varicode works. I also understand how operators work and > how they are already using gridsquares and they could care less about > changing just so us APRS people can plot them...

The application of PSK31 Thomas suggested and I expanded upon does not yet exist. So the existing "user base" is irrelevant. Its just a modulation method Bob, that's all. I could (almost) care less about the existing user base as any tracking operations would not be on the same frequency as the existing user base.

> > Now, transcribing this to varicode... 117 bits ... or.. 4.8 seconds to > > send a very ambiguous posit that is not very computer friendly.
>
> Not ambiguous at all when you consider that PSK31 is being used on HF, > Internationally. The Grid plots the guy to within less than 2 miles in > most areas of the world and is well close enough for an HF DX contact in > my thinking...

If there is no APRS coverage in a particular area, AND I can send locations to within 10's of feet, why not do it? I'm not going to jump on the emergency bandwagon, but in some terrain's a grid square would be close to useless in locating someone.

Again, I think the basic misunderstanding here is you are interested in tracking houses (which don't move) and I am interested in tracking assets (which do). Why close your mind at the beginning of the game? I'm not saying what I suggested was the way to go, but just because you don't see things that way doesn't mean they can't be used that way. Don't tell me about how the users won't accept it... tell me why it won't work or why you will not support it within the context of your role in APRS.

> With its VERY
> precious bandwidth, it needs to be MAXIMALLY *user friendly*. With the > computer power we have today, we should make the computers work for US, > not make us REDEFINE HAM radio QSOs so the "computer" is happy...

PSK31 is a mode. It has nothing to do with a QSO. Yes, it was optimized for QSO's and frankly, posits would be better served by tossing varicode, yet I am aware of the value of bootstrapping.

> > Now, taking this a step further...: wb4apr-C\$Vh@<LF>
> > ...ranscribing this to varicode we get a 25% savings in air time.

>
> No, you get another 0.3 seconds saved in a 1 minute QSO... Savings?

The example I gave where ID/posit frames. Self supporting. Nothing to do with QSO's. Savings as posted.

Again, you are putting your views in what APRS should be into this discussion, which is coloring your thinking. It appears to me your goal is to "sell" APRS to the existing PSK31 user base. This is fine, but it is a separate discussion. If you go back to the original posting that started this thread, you'll see the poster clearly wanted to graft PSK31 to APRS, not graft APRS to the PSK31 user base. As such, my comments about air time savings are entirely relevant and correct. (although it appears now he strangely agrees with you.... not matter, doesn't change my thoughts)

> Ah, BUT... DISADVANTAGES:
>
> 1. No one will use it.

Yes, indeed, especially with the overwhelming support I am seeing from you.

> It is very easy to write a parser that can recognize a GRID SQUARE just
> about anywhere in free form TEXT. APRSdos, WinAPRS and APRS+SA and maybe
> others already have such algorithms..

OK, then lets get back on focus in your line of thought. I am willing to roll over and play dead if you help me here.

I've been looking at PSK31 for use in trackers. Even posted some mind storms on it back in January on the PICSIG. A fellow has written some PIC source with CCS C compiler to do PSK31 and it is freely available. Its actually everything all rolled into one. I've gone through the source, and it looks like I can do what I want.

Yet you say its very easy to write these parsers for grid squares, or in the case of a tracker, the lookup table to convert a precise lat/lon to a fairly imprecise grid square. Yet you are laboring under the false assumption that a PIC is a full blown PC. Its not. It only has up to 368 bytes of RAM and often less then 4K of memory. As such, the direct path is often the best path to take. In this case, directly sending lat/lon instead of having a large lookup table with grid squares. Yes, pick and chose your varicode, but still way smaller then a massive lookup tree.

So... suggest a method to do these grid square lookups then in these constraints... maybe you know something I don't about putting 300lbs of groceries in a 5lb bag.

And if anyone is interested in this project, I can try to help. I'm busy now myself with another AVL project, but I'd like to help anyone I can here. I've talked with the author of the PIC PSK31 transmitter, and he was very supportive of anyone grafting APRS support onto it. See http://www.ussc.com/~turner/psk_transmitter.html It is written in CCS PCM, and I can help anyone with this if need be (I've written alot of PIC code myself on CCS, and even a few little things for the TAPR project).

So however we do it.... grid squares or real lat/lons, we are alot closer to a PIC based PSK31 tracker then we think. Most of the work is already done. Lets not throw the baby out with the bath water in our passion. Worst case, we can just start with a inefficient, but existing APRS protocol and work down from there, but IMHO, grid squares/lookup tables are not practical in most mobile trackers.

Regards,

Jeff

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21. [aprsspec] Re: [aprsig] RE: APRS & PSK31

From: "Thomas M. Schaefer" <toms@inconnect.com>
Date: Fri, 21 Jul 2000 14:10:07 -0600
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: <arpp@onelist.com>
Message-ID: <LYR11589-97830-2000.07.21-15.13.56--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If we take the PIC example, then I agree we need to maximize everything. That discussion is the same as MIC-E. It is a smaller compressed protocol that humans cannot understand, but the computers do. The only issue there is that I need a program that rapidly scans some area on a band (like 14.070)

and gets data. The PIC would then just beacon. The problem of course is that I may not be listening in a certain area when you decide to beacon. Beaconsing twice could help this problem.

If you look at the speed of the algorithms, it should be quite fast to jump to the next signal on the band, see if it has any POSIT qualities, the jump to the next one. Perhaps, if the POSIT was aprs aprs aprs aprs de ny4i|<posit info>|. The receiver would have a better chance to find the preamble and stop.

If we want, this can be taken off to the arpp list one onelist.

Tom

----- Original Message -----

From: "Jeff King" <jeff@aerodata.net>

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Cc: "TAPR APRS Special Interest Group" <aprssig@lists.tapr.org>;
<aprsspec@lists.tapr.org>

Sent: Friday, July 21, 2000 1:42 PM

Subject: [aprsspec] Re: [aprssig] RE: APRS & PSK31

>
>
> Bob Bruninga wrote:
>
> > I am approaching a merging of APRS display technology from the
perspective
> > of the existing PSK31 user base.
>
> Which is fine. But I was approaching it from the perspective of the APRS
> user base..... tracking assets. I have little interest in HF chit chatting
but
> if one can bootstrap off existing technology to enhance amateur AVL,
> which is my interest, then I think we should.
>
> > Look at any PSK31 QSO. They already use
> > GRID SQUARES. SO parsing and displaying that in APRS is a natural, and
> > can be done NOW and requires NO CHANGE IN existing operator technique.
> > You do it on receipt... THus you can begin plotting people NOW.
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> Why can't we do both then? I'm interested in tracking assets, not peoples
houses.
> As such, I need to target platforms that will support this. A laptop in a
vehicle
> is not practical in all applications. However, a PIC processor is. And
> there already is open source PSK31 code out for the PIC. Sure, I could
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> grid squares with the PIC, but gezz, how big would the look-up table be?
> I'd have to relate lat/long to every grid square. Why not just make life
> easier for everyone and just send lat/lon as that's what the GPS gives me?
>
> > Your unique selection of varicode characters can save 19% over a "grid
> > square" but I bet you will never convince anyone to use it. And it must
> > be implemented by all SENDERS before it has any value. Good luck...
>
> Actually, I was trying to convince you to look at the big picture here
since
> we have a relatively clean slate. I'm not saying not to use grid squares,
I
> was suggesting a alternate method that allowed the use of a GPS to track
> assets using a minimal processor. As a side benefit, it could be more
> compact then grid squares, easier to parse and more precise.
>
> Bob, I don't understand your resistance here.... you have what, four
> or five different ways to say the same thing on AX.25 aprs?!? I was
> throwing some ideas out here and thought I could get some dialog on
> the issue... so far I've gotten one guy arguing the merits of RTTY over
> PSK31 and now you shooting the idea down before it even gets out the
> gate. I think what I had was a very good way to use PSK31 to track
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Seemed
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> > changing just so us APRS people can plot them...
>
> The application of PSK31 Thomas suggested and I expanded upon does not yet
> exist. So the existing "user base" is irrelevant. Its just a modulation
method Bob,
> that's all. I could (almost) care less about the existing user base as any
tracking
> operations would not be on the same frequency as the existing user base.
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> > Now, transcribing this to varicode... 117 bits ... or.. 4.8 seconds to
> > send a very ambiguous posit that is not very computer friendly.
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> > Not ambiguous at all when you consider that PSK31 is being used on HF,
> > Internationally. The Grid plots the guy to within less than 2 miles in
> > most areas of the world and is well close enough for an HF DX contact in
> > my thinking...
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> If there is no APRS coverage in a particular area, AND I can send
locations
> to within 10's of feet, why not do it? I'm not going to jump on the
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> bandwagon, but in some terrain's a grid square would be close to useless
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tracking
> houses (which don't move) and I am interested in tracking assets (which
do).
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> was the way to go, but just because you don't see things that way doesn't
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> they can't be used that way. Don't tell me about how the users won't
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> tell me why it won't work or why you will not support it within the
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> > precious bandwidth, it needs to be MAXIMALLY *user friendly*. With the
> > computer power we have today, we should make the computers work for US,
> > not make us REDEFINE HAM radio QSOs so the "computer" is happy...
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> I am aware of the value of bootstrapping.
>
> > > Now, taking this a step further...: wb4apr-C\$Vh@<LF>
> > > ...ranscribing this to varicode we get a 25% savings in air time.
> >
> > No, you get another 0.3 seconds saved in a 1 minute QSO... Savings?
>
> The example I gave where ID/posit frames. Self supporting. Nothing to do
> with QSO's. Savings as posted.
>
> Again, you are putting your views in what APRS should be into this
discussion, which
> is coloring your thinking. It appears to me your goal is to "sell" APRS to
the existing
> PSK31 user base. This is fine, but it is a separate discussion. If you go
back to
> the original posting that started this thread, you'll see the poster
clearly wanted to
> graft PSK31 to APRS, not graft APRS to the PSK31 user base. As such, my
> comments about air time savings are entirely relevant and correct.
(although it

> appears now he strangely agrees with you.... not matter, doesn't change my thoughts)

>

> > Ah, BUT... DISADVANTAGES:

> >

> > 1. No one will use it.

>

> Yes, indeed, especially with the overwhelming support I am seeing from you.

>

> > It is very easy to write a parser that can recognize a GRID SQUARE just

> > about anywhere in free form TEXT. APRSdos, WinAPRS and APRS+SA and maybe

> > others already have such algorithms..

>

> OK, then lets get back on focus in your line of thought. I am willing to roll over and play

> dead if you help me here.

>

> I've been looking at PSK31 for use in trackers. Even posted some mind storms on it

> back in January on the PICSIG. A fellow has written some PIC source with CCS C

> compiler to do PSK31 and it is freely available. Its actually everything all rolled into

> one. I've gone through the source, and it looks like I can do what I want.

>

> Yet you say its very easy to write these parsers for grid squares, or in the case of a tracker,

> the lookup table to convert a precise lat/lon to a fairly imprecise grid square. Yet you are

> laboring under the false assumption that a PIC is a full blown PC. Its not. It only has

> up to 368 bytes of RAM and often less then 4K of memory. As such, the direct path

> is often the best path to take. In this case, directly sending lat/lon instead of having

> a large lookup table with grid squares. Yes, pick and chose your varicode, but still way

> smaller then a massive lookup tree.

>

> So... suggest a method to do these grid square lookups then in these constraints... maybe you

> know something I don't about putting 300lbs of groceries in a 5lb bag.

>

> And if anyone is interested in this project, I can try to help. I'm busy now myself with

> another AVL project, but I'd like to help anyone I can here. I've talked with the

> author of the PIC PSK31 transmitter, and he was very supportive of anyone grafting

> APRS support onto it. See http://www.ussc.com/~turner/psk_transmitter.html

> It is written in CCS PCM, and I can help anyone with this if need be (I've written

> alot of PIC code myself on CCS, and even a few little things for the TAPR project).

>

> So however we do it.... grid squares or real lat/lons, we are alot closer to a PIC

> based PSK31 tracker then we think. Most of the work is already done. Lets not

> throw the baby out with the bath water in our passion. Worst case, we can just

> start with a inefficient, but existing APRS protocol and work down from there, but

> IMHO, grid squares/lookup tables are not practical in most mobile trackers.

>

> Regards,

>

> Jeff

>

>

>

> ---

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> Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

>

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22. [aprsspec] Re: We getting there?

From: John Ackermann <jra@febo.com>
Date: Sat, 22 Jul 2000 11:11:44 -0300
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-97903-2000.07.22-10.17.00--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> APRS Spec 101m - May 1st, 2000
>
> Not meaning to nag, Ian, but I'm curious. How's it coming along?
> 73, Cap KE6AFE
> --

Ian's final draft has been in the hands of the group for a while now, and we're scheduling to close the review and have a final vote by the end of July. With luck, the final release will follow very shortly after that (Ian will just need to make whatever final tweaks there are and change the title to final form).

73,

John N8UR
jra@febo.com

PS -- Sorry for not responding to this sooner; I, like some of the WG group members, have been on vacation and away from email for the last couple of weeks.

--

John Ackermann N8UR
Dayton, Ohio, USA
jra@febo.com -- <http://www.febo.com>

-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: 2.6.3a

mQBtAzgI9hgAAEDAMiMQDZTVVuVIS0AscJ0Wy63oK4+Q5xvtxbX/ZoG1qC0uYDI
Fph4/RqL9vVEItWB6ISk+zbkATzPgy84nrI7+GBtld4F9DoHWARQXjC1I8cFZjY
TSe16ffq0/ba1ukLnQAFebQlSm9obiBSLiBBY2tlcm1hbm4gTjhhVUia8anJhQGZl
Ym8uY29tPokAdQMFEDgI9hjq0/ba1ukLnQEBtYIC/AxJ2RqT0/9TqY8JGEkPx2sw
+W5Z6Tu4UI654t9diGdCcIEPjOG1qUvwH2Xop0Yj9QGoM4NnHiw6qUSN5VH7hHKA
bGnpuTxinuW/gKaI3bt2MC8QZzQ0gy2de269071E2A==
=UHWL
-----END PGP PUBLIC KEY BLOCK-----

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23. [aprsspec] Re: [aprssig] RE: APRS & PSK31

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sun, 23 Jul 2000 17:46:33 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>,
TAPR APRS Special Interest Group <aprssig@lists.tapr.org>
Message-ID: <LYR11589-98046-2000.07.23-16.52.03--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I agree, that it would be ideal to use PSK31 techniques for much better HF success. But it cannot operate as a dumb tracker, since the tuning has to be within a fraction of a HZ. Thus the sender either has to match an IGATE beacon or the IGATE must auto-tune the tracker. Both of these take time... and I doubt are practical.

Thus, you are back to square one, needing operators at both ends, and thus back to a human QSO, etc.

If you can make it automatic, then I am all for it!

Bob

On Fri, 21 Jul 2000,

Jeff King wrote:

>
>
> Bob Bruninga wrote:
>
> > I am approaching a merging of APRS display technology from the perspective
> > of the existing PSK31 user base.
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> Which is fine. But I was approaching it from the perspective of the APRS
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> IMHO, grid squares/lookup tables are not practical in most mobile trackers.
>
> Regards,

>
> Jeff
>
>
>
> ---
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> Questions regarding the SIG go to the SIG administrator: wallou@taprr.org
>
>

APRSDos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>
See GPS on ANY radio: <http://www.taprr.org/taprr/html/mic-e.html>

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24. [aprsspec] Re: [aprrsig] RE: APRS & PSK31

From: "Dale E. Reed" <w8abz@mindspring.com>
Date: Tue, 25 Jul 2000 03:14:10 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.taprr.org>
Message-ID: <LYR11589-98322-2000.07.24-22.18.15--lyris.aprsspec#taprr.org@lists.taprr.org>
Rendered body type: text/plain

I'm trying to remember WAAAAYYY back to the beginning of this thread, but I believe the whole thing started with a "suppose" like: "Suppose you had a program that decoded all the PSK31 conversations in the passband of your receiver..." It would look at the entire 2.5 - 3.0 kHz swath of incoming stuff, like the frequency waterfall in DigiPan, but decode ALL the incoming data streams, monitor them for stuff like "DE W8ABZ@EN91fm" and plot them on your map.

I don't know DSP, so I don't know if it's possible (with a sound card at 44 kHz sampling with a big honkin' Pentium Ninety-Two at 10.5 GHz) to decode ALL the PSK31 data in a 3 kHz passband, but I think that would be a cool program. Might also program it with user-enterable rules, like to look for rare DX calls, stations not yet contacted on the current band for a contest, the word "emergency" or "mayday", or whatever else. (Bet the FCC could use it, too, if they're not already... :-). Anyway, the point of this is that the original premise was that you wouldn't need exact tuning because you'd be decoding everything in the passband.

At least, I think that was the deal. Could be wrong. I'm the same idiot who thought I should use the output of the sound card with a stereo gen chip to FM the clock on a 100 MHz Pentium so you could broadcast to any Walkman or other stereo receiver in your house. Silly me.

Regards,
Dale
DE W8ABZ@EN91fm/-:w8abz@mindspring.com <---- plot this!

>Subject: Re: [aprrsig] RE: APRS & PSK31
>From: Bob Bruninga <bruninga@nadn.navy.mil>
>Date: Sun, 23 Jul 2000 17:46:33 -0400 (EDT)
>X-Message-Number: 1
>
>I agree, that it would be ideal to use PSK31 techniques for much better HF
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>
>Thus, you are back to square one, needing operators at both ends, and thus
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>
>If you can make it automatic, then I am all for it!
>Bob
> On Fri, 21 Jul 2000,
>Jeff King wrote:

>>
>>>etc.

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August 2000

Original source file: aprsspec.0008

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprssid/mail_archive/aprssid.0008

1. [aprssid] New Mic-E Test Suite available

From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 2 Aug 2000 16:52:22 +0100
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>
Message-ID: <LYR11589-100036-2000.08.02-10.57.30--lyris.aprssid#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have just produced a new test suite for Mic-E software. It consists of around 200 carefully crafted packets, designed to stretch the Mic-E software in all directions.

I am not posting it to my website just yet, but if you would like a copy (about 30KB) just drop me a mail: g3nrw@tapr.org

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@tapr.org |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.tapr.org/~g3nrw |
| Mic-Encoder Software: http://www.tapr.org/~g3nrw |
+-----+
```

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

2. [aprssid] Re: New Mic-E Test Suite available

From: Steve Dimse <sdimse@earthlink.net>
Date: Wed, 2 Aug 2000 12:45:58 -0400
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>
Message-ID: <LYR11589-100042-2000.08.02-11.51.40--lyris.aprssid#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 8/2/00 11:52 AM Ian Wade (Ian.Wade@care4free.net) wrote:

>I have just produced a new test suite for Mic-E software. It consists of
>around 200 carefully crafted packets, designed to stretch the Mic-E
>software in all directions.

>
Here's the output of APRServe's parser if anyone cares to write a program to reconcile Ian's report format with the converted packets, or perhaps Ian would like to run this through his program and diff the result...

Too painful to go through a couple hundred lines by hand...

Steve K4HG

[Attachment: out.txt; text/plain; 13,884 bytes]

3. [aprssid] Re: New Mic-E Test Suite available

From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 2 Aug 2000 20:22:51 +0100
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>
Message-ID: <LYR11589-100067-2000.08.02-14.27.44--lyris.aprssid#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In article <LYR14779-100042-2000.08.02-11.51.40--Ian.Wade#care4free.net@lists.tapr.org>, Steve Dimse <sdimse@earthlink.net> writes

>On 8/2/00 11:52 AM Ian Wade (Ian.Wade@care4free.net) wrote:

>

>>I have just produced a new test suite for Mic-E software. It consists of
>>around 200 carefully crafted packets, designed to stretch the Mic-E
>>software in all directions.

>>

>Here's the output of APRServe's parser if anyone cares to write a program
>to reconcile Ian's report format with the converted packets, or perhaps

```
>Ian would like to run this through his program and diff the result...
>
>Too painful to go through a couple hundred lines by hand...
>
```

Steve, I've just endured the pain. And I'm sorry to say it **was** painful. There are **many** errors in your conversions.

I'm attaching my comments (in 3 parts to allow me to post here).

In summary, there are 5 common errors:

1. Latitude conversion of packets containing Custom message codes is completely wrong.
2. Custom message codes are incorrectly interpreted.
3. Position ambiguity is, er, ambiguous. Well and truly screwed, with some wrong hemispheres (e.g. West instead of East), and in one case 20 deg long became 120 deg long.
4. Reports containing symbols with numeric overlays were not converted for some reason.
5. The raw data had several sections containing bad packet data. None of these packets should have been converted.

Here is part 1 of my comments. Errors are underlined with ~

PART 1 of 3

```
# ++++++ Good latitude values
G3NRW>APE100:@021633z0000.00S/00000.00E>004/040/E>SRV/M7EMERGENCY!      (0x1c)
G3NRW>APE100:@021633z0123.45S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z6759.00S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0012.34N/12021.22W>025/232/E>SRV/M00ff Duty
G3NRW>APE100:@021633z5656.99N/12021.22W>025/232/E>SRV/M00ff Duty
G3NRW>APE100:@021633z1230.12S/02021.22E>025/232/E>SRV/M00ff Duty
      ~~~~~
      should be:      0120.12      C0Custom-0

G3NRW>APE100:@021633z4563.45S/02021.22E>025/232/E>SRV/M00ff Duty
      ~~~~~
      should be:      3453.45      C0Custom-0

G3NRW>APE100:@021633z7864.56S/02021.22E>025/232/E>SRV/M00ff Duty
      ~~~~~
      should be:      6754.56      C0Custom-0

G3NRW>APE100:@021633z9012.99S/02021.22E>025/232/E>SRV/M3Returning
      ~~~~~
      should be:      8012.99      C3Custom-3

G3NRW>APE100:@021633z0000.00S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.01S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z9000.00S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z8959.99S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z10000.00S/02021.22E>025/232/E>SRV/M3Returning
      ~~~~~
      should be:      9000.00      C3Custom-3

G3NRW>APE100:@021633z10069.99S/02021.22E>025/232/E>SRV/M00ff Duty
      ~~~~~
      should be:      8959.99      C0Custom-0

G3NRW>APE100:@021633z0123.52S/02021.22W>025/232/E>SRV/M7EMERGENCY!
      ~~~~~
      should be:      0123.4 S (i.e. space before the S)
      should be:      02021.2 E (i.e. East, not West, and a space before the E)

G3NRW>APE100:@021633z0123.112S/12021.22W>025/232/E>SRV/M7EMERGENCY!
      ~~~~~
      should be:      0123.  S (i.e. 2 spaces after the dot)
      should be:      12021.  E (i.e. East, not West, and 2 spaces after the dot)
```

G3NRW*>APE100:@021633z0123.105S/12021.22E>025/232/E>SRV/M7EMERGENCY!

~~~~~  
should be: 0123. S (i.e. 2 spaces after the dot)  
should be: 12021. E (2 spaces after the dot)

G3NRW\*>APE100:@021633z0130.110N/12021.22W>025/232/E>SRV/M7EMERGENCY!

~~~~~  
should be: 012 . N (i.e. space before the dot, 2 spaces after the dot)
should be: 1202 . W (i.e. space before the dot, 2 spaces after the dot)

G3NRW*>APE100:@021633z0132.00N/02021.22E>025/232/E>SRV/M7EMERGENCY!

~~~~~  
should be: 012 . S (i.e. South, not North, space before the dot, 2 spaces after the dot)  
should be: 0202 . E (i.e. space before the dot, 2 spaces after the dot)

G3NRW\*>APE100:@021633z0132.100N/12021.22E>025/232/E>SRV/M7EMERGENCY!

~~~~~  
should be: 012 . S (i.e. South, not North, space before the dot, 2 spaces after the dot)
should be: 1202 . E (space before the dot, 2 spaces after the dot)

G3NRW*>APE100:@021633z01130.130N/12021.22W>025/232/E>SRV/M6PRIORITY

~~~~~  
should be: 01 . N (i.e. 2 spaces before the dot, 2 spaces after the dot)  
should be: 020 . W (i.e. 2 spaces before the dot, 2 spaces after the dot,  
dot,  
should be 020 degrees, not 120)  
should be: M7EMERGENCY

G3NRW\*>APE100:@021633z12110.12S/02021.22E>025/232/E>SRV/M00ff Duty

~~~~~  
should be: 01 . S (i.e. 2 spaces before the dot, 2 spaces after the dot)
should be: 020 . E (i.e. 2 spaces before the dot, 2 spaces after the dot)
should be: C0Custom0

G3NRW*>APE100:@021633z40111.99S/02021.22E>025/232/E>SRV/M2En Route

~~~~~  
should be: 30 . S (i.e. 2 spaces before the dot, 2 spaces after the dot)  
should be: 020 . E (i.e. 2 spaces before the dot, 2 spaces after the dot)  
should be: C2Custom2

# ++++++ Bad Latitude values

ALL OF THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.

~~~~~  
G3NRW*>APE100:@021633z9000.01S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z6760.00S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z5678.99N/12021.22W>025/232/E>SRV/M00ff Duty
G3NRW*>APE100:@021633z10012.99S/02021.22E>025/232/E>SRV/M3Returning
G3NRW*>APE100:@021633z2000.00S/02021.22E>025/232/E>SRV/M5Special
G3NRW*>APE100:@021633z10100.00S/02021.22E>025/232/E>SRV/M3Returning
G3NRW*>APE100:@021633z2100.00S/02021.22E>025/232/E>SRV/M5Special
G3NRW*>APE100:@021633z11100.00S/02021.22E>025/232/E>SRV/M3Returning
G3NRW*>APE100:@021633z13000.00S/02021.22E>025/232/E>SRV/M3Returning
G3NRW*>APE100:@021633z14000.00S/02021.22E>025/232/E>SRV/M3Returning
G3NRW*>APE100:@021633z15000.00S/02021.22E>025/232/E>SRV/M3Returning
G3NRW*>APE100:@021633z0001.00N/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.20S/12021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.09S/02021.22W>025/232/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z11000.00S/02021.22E>025/232/E>SRV/M3Returning

continued in Part 2

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4. [aprrspec] Re: New Mic-E Test Suite available

From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 2 Aug 2000 20:29:50 +0100
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>
Message-ID: <LYR11589-100071-2000.08.02-14.36.02--lyris.aprrspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

PART 3 of 3

```
# ++++++ SPEED
# ++++++ Good speed (hundreds/tens) (SP+28 byte)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/000/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/000/E>SRV/M7EMERGENCY!      (0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/010/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/010/E>SRV/M7EMERGENCY!      (0x1d)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/020/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/020/E>SRV/M7EMERGENCY!      (0x1e)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/030/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/030/E>SRV/M7EMERGENCY!      (0x1f)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/180/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/180/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/190/E>SRV/M7EMERGENCY!      (0x7f)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/190/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/200/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/210/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/780/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/790/E>SRV/M7EMERGENCY!
```

++++++ Bad speed (hundreds/tens) (SP+28 byte)

THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.

```
G3NRW*>APE100:@021633z1000.00S/00000.04E>004/-10/E>SRV/M7EMERGENCY!      (0x1b)
G3NRW*>APE100:@021633z1000.00S/00000.04E>004/-1560/E>SRV/M7EMERGENCY!    (0x80)
```

```
# ++++++ Good speed (units) (DC+28 byte)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/000/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/000/E>SRV/M7EMERGENCY!      (0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/001/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/001/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/002/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/002/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/003/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/003/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/004/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/004/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/005/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/005/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/006/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/006/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/007/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/007/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/008/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/008/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/009/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/009/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>304/009/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>304/009/E>SRV/M7EMERGENCY!
```

++++++ Bad speed (units) (DC+28 byte)

THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.

```
G3NRW*>APE100:@021633z1000.00S/00000.04E>-96/000/E>SRV/M7EMERGENCY!      (0x1b)
G3NRW*>APE100:@021633z1000.00S/00000.04E>404/009/E>SRV/M7EMERGENCY!
```

```
# ++++++ COURSE
# ++++++ Good course (hundreds) (DC+28 byte)
G3NRW*>APE100:@021633z0000.00S/00000.04E>000/000/E>SRV/M7EMERGENCY! (0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>000/000/E>SRV/M7EMERGENCY! (0x1c 0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>100/000/E>SRV/M7EMERGENCY! (0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>100/000/E>SRV/M7EMERGENCY! (0x1d 0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>200/000/E>SRV/M7EMERGENCY! (0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>200/000/E>SRV/M7EMERGENCY! (0x1e 0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>300/000/E>SRV/M7EMERGENCY! (0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>300/000/E>SRV/M7EMERGENCY! (0x1f 0x1c)
```

```
# ++++++ Good course (tens/units) (SE+28 byte)
G3NRW*>APE100:@021633z0000.00S/00000.04E>000/000/E>SRV/M7EMERGENCY! (0x1c)
G3NRW*>APE100:@021633z0000.00S/00000.04E>001/000/E>SRV/M7EMERGENCY! (0x1d)
G3NRW*>APE100:@021633z0000.00S/00000.04E>002/000/E>SRV/M7EMERGENCY! (0x1e)
G3NRW*>APE100:@021633z0000.00S/00000.04E>003/000/E>SRV/M7EMERGENCY! (0x1f)
G3NRW*>APE100:@021633z0000.00S/00000.04E>004/000/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>005/000/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>098/000/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E>099/000/E>SRV/M7EMERGENCY! (0x7f)
G3NRW*>APE100:@021633z0000.00S/00000.04E>360/009/E>SRV/M7EMERGENCY!
```

```
# ++++++ Bad course (tens/units) (SE+28 byte)
```

```
ALL OF THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.
```

```
G3NRW*>APE100:@021633z0000.00S/00000.04E>399/000/E>SRV/M7EMERGENCY! (0x1b)
G3NRW*>APE100:@021633z0000.00S/00000.04E>244/000/E>SRV/M7EMERGENCY! (0x80)
G3NRW*>APE100:@021633z0000.00S/00000.04E>361/009/E>SRV/M7EMERGENCY!
```

```
# ++++++ SYMBOLS
```

```
# ++++++ Good symbols/overlays
G3NRW*>APE100:@021633z0000.00S/00000.04E!004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S\00000.04E!004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E#004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S\00000.04E#004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00SA00000.04E#004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00SZ00000.04E#004/040/E>SRV/M7EMERGENCY!
```

```
G3NRW*>0000P0:\vX #0
```

```
should be:
```

```
G3NRW*>APE100:@021633z0000.00S000000.04E#004/040/E>SRV/M7EMERGENCY!
```

```
G3NRW*>0000P0:\vX #9
```

```
should be:
```

```
G3NRW*>APE100:@021633z0000.00S900000.04E#004/040/E>SRV/M7EMERGENCY!
```

```
G3NRW*>APE100:@021633z0000.00S/00000.04Ey004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S\00000.04E{004/040/E>SRV/M7EMERGENCY!
```

```
# ++++++ Bad symbols/overlays
```

```
ALL OF THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.
```

```
G3NRW*>123456:\vX > (The Information field is only 8 bytes long instead of 9)
G3NRW*>APE100:@021633z0000.00S/00000.04E 004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S\00000.04E 004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/00000.04E004/040/E>SRV/M7EMERGENCY! (0x7f)
G3NRW*>APE100:@021633z0000.00S\00000.04E004/040/E>SRV/M7EMERGENCY! (0x7f)
G3NRW*>APE100:@021633z0000.00SA00000.04E!004/040/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S\00000.04E)004/040/E>SRV/M7EMERGENCY!
```

```
G3NRW*>0000P0:`vX    #&
G3NRW*>0000P0:`vX    #&
```

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5. [aprsspec] Re: New Mic-E Test Suite available

From: Ian Wade <Ian.Wade@care4free.net>
Date: Wed, 2 Aug 2000 20:29:01 +0100
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-100072-2000.08.02-14.36.04--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain

PART 2 of 3

++++++ Good message codes

```
G3NRW*>APE100:@021633z0000.00S/02021.22E>025/232/E>SRV/M7EMERGENCY!
G3NRW*>APE100:@021633z0000.00S/02021.22E>025/232/E>SRV/M6PRIORITY
G3NRW*>APE100:@021633z0120.00S/02021.22E>025/232/E>SRV/M5Special
G3NRW*>APE100:@021633z0120.00S/02021.22E>025/232/E>SRV/M4Committed
G3NRW*>APE100:@021633z2030.00S/02021.22E>025/232/E>SRV/M3Returning
G3NRW*>APE100:@021633z3040.00S/02021.22E>025/232/E>SRV/M2En Route
G3NRW*>APE100:@021633z5650.00S/02021.22E>025/232/E>SRV/M1In Service
G3NRW*>APE100:@021633z89100.00S/02021.22E>025/232/E>SRV/M00ff Duty
```

```
~~~~~
should be:      89 . S (i.e. 2 spaces before the dot, 2 spaces after the dot)
should be:      020 . E (i.e. 2 spaces before the dot, 2 spaces after the dot)
```

```
G3NRW*>APE100:@021633z0010.00S/02021.22E>025/232/E>SRV/M6PRIORITY
```

```
~~~~~
should be:      0000.00      C6Custom6
```

```
G3NRW*>APE100:@021633z0200.00S/02021.22E>025/232/E>SRV/M5Special
```

```
~~~~~
should be:      0100.00      C5Custom5
```

```
G3NRW*>APE100:@021633z0340.00S/02021.22E>025/232/E>SRV/M4Committed
```

```
~~~~~
should be:      0230.00      C4Custom4
```

```
G3NRW*>APE100:@021633z5000.00S/02021.22E>025/232/E>SRV/M3Returning
```

```
~~~~~
should be:      4000.00      C3Custom3
```

```
G3NRW*>APE100:@021633z6060.00S/02021.22E>025/232/E>SRV/M2En Route
```

```
~~~~~
should be:      5050.00      C2Custom2
```

```
G3NRW*>APE100:@021633z8900.00S/02021.22E>025/232/E>SRV/M1In Service
```

```
~~~~~
should be:      7800.00      C1Custom1
```

```
G3NRW*>APE100:@021633z10230.00S/02021.22E>025/232/E>SRV/M00ff Duty
```

```
~~~~~
should be:      9012.00 (and hence rejected because >90)
should be:      C0Custom 0
```

++++++ Bad message codes

ALL OF THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.

~~~~~  
(They contain a mixture of Standard "1" bits and Custom "1" message bits)

```
G3NRW*>APE100:@021633z1200.00S/02021.22E>025/232/E>SRV/M00ff Duty
G3NRW*>APE100:@021633z1000.00S/02021.22E>025/232/E>SRV/M2En Route
G3NRW*>APE100:@021633z0110.00S/02021.22E>025/232/E>SRV/M00ff Duty
```

```
# ++++++ LONGITUDE
# ++++++ Good longitude degrees (d+28 byte)
G3NRW>APE100:@021633z0000.00S/00000.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00100.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00200.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00800.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00900.04E>004/040/E>SRV/M7EMERGENCY! (0x7f)
G3NRW>APE100:@021633z0000.00S/01000.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/01100.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/09700.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/09800.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/09900.04E>004/040/E>SRV/M7EMERGENCY! (0x7f)
G3NRW>APE100:@021633z0000.00S/10000.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/10100.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/10800.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/10900.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/11000.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/11100.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/17800.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/17900.04E>004/040/E>SRV/M7EMERGENCY!
```

# ++++++ Bad longitude degrees (d+28 byte)

ALL OF THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.

```
G3NRW>APE100:@021633z0000.00S/10900.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/10400.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/10000.04E>004/040/E>SRV/M7EMERGENCY! (0x1d)
G3NRW>APE100:@021633z0000.00S/10300.04E>004/040/E>SRV/M7EMERGENCY! (0x1f)
G3NRW>APE100:@021633z0000.00S/07300.04E>004/040/E>SRV/M7EMERGENCY! (0x01)
```

```
# ++++++ Good longitude minutes (m+28 byte)
G3NRW>APE100:@021633z0000.00S/00000.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00001.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00008.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00009.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00010.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00011.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00058.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00059.04E>004/040/E>SRV/M7EMERGENCY!
```

# ++++++ Bad longitude minutes (m+28 byte)

THE REPORTS BELOW ARE WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.

```
G3NRW>APE100:@021633z0000.00S/00010.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00009.04E>004/040/E>SRV/M7EMERGENCY!
```

```
# ++++++ Good longitude hundredths (h+28 byte)
G3NRW>APE100:@021633z1000.00S/00000.00E>004/040/E>SRV/M7EMERGENCY! (0x1c)
G3NRW>APE100:@021633z0000.00S/00000.01E>004/040/E>SRV/M7EMERGENCY! (0x1d)
G3NRW>APE100:@021633z0000.00S/00000.02E>004/040/E>SRV/M7EMERGENCY! (0x1e)
G3NRW>APE100:@021633z0000.00S/00000.03E>004/040/E>SRV/M7EMERGENCY! (0x1f)
G3NRW>APE100:@021633z0000.00S/00000.04E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00000.05E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00000.98E>004/040/E>SRV/M7EMERGENCY!
G3NRW>APE100:@021633z0000.00S/00000.99E>004/040/E>SRV/M7EMERGENCY! (0x7f)
```

# ++++++ Bad longitude hundredths (h+28 byte)

THE REPORTS BELOW ARE BADLY WRONG AND SHOULD NOT HAVE BEEN GENERATED AT ALL.

```
G3NRW>APE100:@021633z1000.00S/00000.-1E>004/040/E>SRV/M7EMERGENCY! (0x1b)
G3NRW>APE100:@021633z1000.00S/00000.-156E>004/040/E>SRV/M7EMERGENCY! (0x80)
```

Continued in Part 3

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---

## 6. [aprsspec] Re: New Mic-E Test Suite available

From: Steve Dimse <sdimse@earthlink.net>  
Date: Wed, 2 Aug 2000 16:41:46 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-100077-2000.08.02-15.47.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 8/2/00 3:22 PM Ian Wade (Ian.Wade@care4free.net) wrote:

>Steve, I've just endured the pain. And I'm sorry to say it *\*was\** painful.

Your choice to do 200+ cases ;-) Thank you for going to the effort.

>There are *\*many\**

>errors in your conversions.

>

>I'm attaching my comments (in 3 parts to allow me to post here).

>

>In summary, there are 5 common errors:

>

>1. Latitude conversion of packets containing Custom message codes is  
>completely wrong.

>

>2. Custom message codes are incorrectly interpreted.

>

Custom messages were introduced long after my code, so no surprise there.

>3. Position ambiguity is, er, ambiguous. Well and truly screwed, with some  
>wrong hemispheres

>(e.g. West instead of East), and in one case 20 deg long became 120 deg long.

>

Ambiguity in Mic-E packets was also introduced long after my code was  
completed as well.

>4. Reports containing symbols with numeric overlays were not converted for  
>some reason.

>

That was a "real" bug, a precedence problem...easily fixed with a pair of  
parentheses. Thanks.

>5. The raw data had several sections containing bad packet data. None of  
>these packets should  
>have been converted.

>

I don't agree...garbage in, garbage out. My code is supposed to be a  
conversion, not a validation. If the packet is simply dropped, there is  
no clue as to why there is a problem. But if someone is writing a Pic-E  
program and makes a mistake, it is far more helpful to them if they see  
that the converted latitude is 150 degrees than if the packet simply  
disappears.

Am I correct that the validation suite did not catch the 0.01 problem  
that precipitated all this? Or did I just miss it in the printout? Which  
of the test cases, if any, were supposed to (or did) pick this up?

Steve K4HG

---

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---

## 7. [aprsspec] Re: New Mic-E Test Suite available

From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>  
Date: Wed, 02 Aug 2000 18:02:56 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-100095-2000.08.02-17.13.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>

> I don't agree...garbage in, garbage out. My code is supposed to be a



> conversion, not a validation. If the packet is simply dropped, there is  
> no clue as to why there is a problem. But if someone is writing a Pic-E  
> program and makes a mistake, it is far more helpful to them if they see  
> that the converted latitude is 150 degrees than if the packet simply  
> disappears.  
>

But could the programs (i.e. aprsd) be a validator and converter but with logging capabilities to forward to the proper author. This reaches out what you mentioned in earlier emails yesterday about logging improper packets.

Basically, take what Ian did and see how can it be logged so that a station can be traced and take proper measures (either because of a misconfiguration, program test or for any other reasons).

|                                  |                                                                                                         |
|----------------------------------|---------------------------------------------------------------------------------------------------------|
| Bruno Quesnel                    | va2bmg@videotron.ca                                                                                     |
| Genie Electrique                 | quesnelb@ve2.ele.etsmtl.ca                                                                              |
| Electrical Engineering           | VA2BMG                                                                                                  |
| Ecole de Technologies Superieure | <a href="http://www.findu.com/cgi-bin/find.cgi?va2bmg">http://www.findu.com/cgi-bin/find.cgi?va2bmg</a> |

---

## 8. [aprsspec] Re: New Mic-E Test Suite available

From: Ian Wade <Ian.Wade@care4free.net>  
Date: Thu, 3 Aug 2000 09:12:39 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-100193-2000.08.03-03.26.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <200008022041.NAA18933@snipe.prod.itd.earthlink.net>, Steve Dimse <sdimse@earthlink.net> writes  
>  
>>In summary, there are 5 common errors:  
>>  
>>1. Latitude conversion of packets containing Custom message codes is  
>>completely wrong.  
>>  
>>2. Custom message codes are incorrectly interpreted.  
>>  
>Custom messages were introduced long after my code, so no surprise there.  
>  
>>3. Position ambiguity is, er, ambiguous. Well and truly screwed, with some  
>>wrong hemispheres  
>>(e.g. West instead of East), and in one case 20 deg long became 120 deg long.  
>>  
>Ambiguity in Mic-E packets was also introduced long after my code was  
>completed as well.  
>

I don't know when your code was "completed", but custom messages and position ambiguity were documented \*years\* ago by Crosswell and Parsons (I don't have the document to hand right now, but it appeared long before the current spec).

>  
>>5. The raw data had several sections containing bad packet data. None of  
>>these packets should  
>>have been converted.  
>>  
>I don't agree...garbage in, garbage out. My code is supposed to be a  
>conversion, not a validation. If the packet is simply dropped, there is  
>no clue as to why there is a problem. But if someone is writing a Pic-E  
>program and makes a mistake, it is far more helpful to them if they see  
>that the converted latitude is 150 degrees than if the packet simply  
>disappears.  
>

Problem is, your garbage out wasn't generated consistently, so in most cases it bore little relationship to the garbage in. This is totally useless in diagnosing faulty PIC programs -- and if \*good\* data in produces \*garbage\* out, what chance does anyone have?

In any case, the world-wide APRS Internet is not the place to be testing such programs.

>Am I correct that the validation suite did not catch the 0.01 problem  
>that precipitated all this? Or did I just miss it in the printout? Which  
>of the test cases, if any, were supposed to (or did) pick this up?

The "longitude hundredths" sections were intended to do this.

The bottom line is that APRServe is badly broken. As a result, many people throughout the world have spent many, many hours trying to track down the source of bad packets (totally wrong Custom latitudes, wrong custom message codes, latitudes with 3 or 4 digits after the decimal point, latitudes > 90, wrong hemisphere, longitude off by +/- 100 degrees, no position ambiguity, etc, etc).

You said the other day that Dale did a great job in fixing aprsd. Now, \*perleese\*, do the same with APRServe.

And ditto to anyone else who is using APRServe-related code. With bugs propagating around the world in minutes, this sloppy, amateurish, arrogant attitude to programming has to stop.

73

Ian, G3NRW

Technical Editor, APRS Protocol Specification

```
--
+-----+
| APRS on 144.800 [I091SX] ~55km/35 miles NNW of London |
| email: g3nrw@tapr.org |
| |
| APRS PROTOCOL SPEC: http://www.tapr.org/tapr/html/Faprswg.html |
| <APRSdec> APRS DECODER: http://www.tapr.org/~g3nrw |
| Mic-Encoder Software: http://www.tapr.org/~g3nrw |
+-----+
```

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## 9. [aprsspec] Re: New Mic-E Test Suite available

From: Steve Dimse <sdimse@netrox.net>  
Date: Thu, 3 Aug 2000 09:25:50 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-100219-2000.08.03-08.31.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 8/3/00 4:12 AM Ian Wade (Ian.Wade@care4free.net) wrote:

>>Ambiguity in Mic-E packets was also introduced long after my code was  
>>completed as well.

>>  
>I don't know when your code was "completed", but custom messages and  
>position ambiguity were documented \*years\* ago by Crosswell and Parsons  
>(I don't have the document to hand right now, but it appeared long  
>before the current spec).

>  
Well, attached is the mic\_e.c file from Alan circa 5/97, it has no mention of either, my code is of the same vintage. To the best of my knowledge, both of these features originated in the D-700 within the last year or so. These just suddenly appeared in a finished product without prior notice (at least to me), an example of why the APRS-WG was needed.

Want more proof? Look at

<http://www.aprs.net/vm/DOS/MICE.HTM>

This was the Mic-E documentation file of APRSdos in 8/97. It also has no mention of either.

>In any case, the world-wide APRS Internet is not the place to be testing  
>such programs.

>  
But it is the place where they often are tested.  
>

>>Am I correct that the validation suite did not catch the 0.01 problem  
>>that precipitated all this? Or did I just miss it in the printout? Which  
>>of the test cases, if any, were supposed to (or did) pick this up?  
>  
>The "longitude hundredths" sections were intended to do this.  
>  
So why didn't it catch it? Surely you did not make a mistake???

>  
>The bottom line is that APRServe is badly broken. As a result, many  
>people throughout the world have spent many, many hours trying to track  
>down the source of bad packets (totally wrong Custom latitudes, wrong  
>custom message codes, latitudes with 3 or 4 digits after the decimal  
>point, latitudes > 90, wrong hemisphere, longitude off by +/- 100  
>degrees, no position ambiguity, etc, etc).  
>  
Who are these "many people" that spent these "many, many hours"???

This code is only applied to input from the TNC...unlike aprsd, APRServe only converts local Mic-E packets. Therefore, it appears you are making up "throughout the world". At its peak APRServe ran in 4 locations, it is presently running in 2. So unless you care to argue LA and Milwaukee (and previously including Nashville and Miami) are "throughout the world", you are displaying your own bias towards making the problem seem far more important than it is.

>You said the other day that Dale did a great job in fixing aprsd. Now, >\*perleese\*, do the same with APRServe.  
>  
I never said I wasn't. The fact that I exposed my results publicly, to what I was sure would be your demeaning attitude (and you didn't disappoint) shows my willingness to improve in this area.

I'll be dropping Dale's procedure into APRServe when I get a chance. He passes it a broken up packet and output buffers, I pass in the full packet. If someone wants to convert Dale's procedure to the later format it will happen sooner, undoubtedly to the great relief of the many temporally-challenged people in SoCal and Milwaukee...

>And ditto to anyone else who is using APRServe-related code. With bugs >propagating around the world in minutes, this sloppy, amateurish, >arrogant attitude to programming has to stop.  
>  
You make statements like this, then when I call you on them you say you weren't insulting me. This sure seems like a direct insult. There is nothing sloppy or amateurish about this. A new feature is added after active maintenance of a program has ceased. No one ever complained about the lack of support for these two rarely used features. I was working on other things. It never got done, just like the 30 other things on the APRServe do list, and the hundred or more on the javAPRS list.

Like Dale, I feel an obligation to try to keep my old program useful, but frankly with just two sites it isn't that high a priority to me. That I've moved on to findU, something I find far more interesting, and that affects far more people, doesn't make me sloppy or amateurish. And as to arrogant, I'd say this message shows you are as deserving of that label as I.

Steve K4HG  
[Attachment: mic\_e.c; application/octet-stream; 5,177 bytes]

## 10. [aprrspec] APRS Test Set

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Thu, 3 Aug 2000 22:45:17 -0700  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-100480-2000.08.04-00.51.08--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ian did a great job with Mic-E Test Set. Though I am not implementing internet gateway service or Mic-E translating digipeating, it will be used for general program decoding validation.

Now, PLEASE, lets have a similar set of basic APRS packets!

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com                      Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of

-----  
A computer without Windows is like a cake without mustard. - anonymous

---

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## 11. [aprsspec] Re: APRS Test Set

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Tue, 8 Aug 2000 15:35:42 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-101512-2000.08.08-17.40.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Good idea! When will you have it ready Jim?

>  
> Ian did a great job with Mic-E Test Set. Though I am not implementing  
> internet gateway service or Mic-E tranlating digipeating, it will be used  
> for general program decoding validation.  
>  
> Now, PLEASE, lets have a similar set of basic APRS packets!  
>  
>  
> Jim Wagner  
> Oregon Research Electronics  
> -----  
> wagnerj@proaxis.com                      Tangent, Oregon 97389  
> KA7EHK@KC7KFE.OR.USA.NOAM              near Corvallis OR, home of  
> ka7ehk@yahoo.com                        Oregon State University  
> -----  
> A computer without Windows is like a cake without mustard. - anonymous

---

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## 12. [aprsspec] Satellite IGATES

From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>  
Date: Wed, 09 Aug 2000 08:55:36 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-101650-2000.08.09-07.57.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi to all...

I've been thinking about the problem of the network architecture et the whole duplicate packets that been going on last week. I concure that the problem is real and many connection are probably made and that could be without.

The idea of central servers should still be there. How many? Good question. I'd say at least 3 which could be fully redundant between them.

The problem of the growing number of IGATES and the idea of managing them all is totally a bad idea. I most give that to Steve. But if the idea of satellite-regional servers be implemented, or a derivative, it may solve the problem....

The idea is quite simple. With small machines (i.e. 486 with low memory), could get data for a certain region and be responsible for that small region (messages, posits and all that good stuff). Those small machine would send to regional servers responsible for few smaller machines.

For access, the smaller machine would not warrent high bandwidth, and would just require to be connected to the internet and reach a bigger server. Then the regional servers could

connect to the main servers and then these server could be managed. Each responsible of the regional servers would be responsible for their server and region...

Yes this puts more responsibility on more person, but it could be managed more easily. Pin point to a person to rule out the problem, either on his own IGATE to block the traffic from a station or any other way he will suite fit. This could limit the propagation of the feeds....

Yes this involves work but I guess we need to put a bit of control in our network. Not too much so that it becomes a pain but just enough to still make ths way of communication fun.

--

|                                 |                             |
|---------------------------------|-----------------------------|
| Bruno Quesnel                   | bruno.quesnel@mindready.com |
| VA2BMG                          | quesnelb@ve2.ele.etsmtl.ca  |
| Stagiaire - MindReady Solutions |                             |
| Solutions Mindready Inc.        | tel.: 514-636-6886 ext 5171 |
| 2196 32ieme Avenue              |                             |
| Lachine (Quebec)H8T 3H7         |                             |

---

### 13. [aprrspec] Proposed change to aprsd Mic-E converter

From: Dale Heatherington <dale@wa4dsy.net>  
Date: Thu, 10 Aug 2000 09:35:49 -0400  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-101900-2000.08.10-08.53.57--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The next release of aprsd will have a couple of minor bug fixes and while I'm tinkering with the code I may as well modify the Mic-E converter so it doesn't have the time stamp. Bob suggested making the first information field character a "=" for Kenwoods because they are message capable and "!" for others. I also propose changing the "E>dsy" field to "Mic-E".

The Mic-E comment field will be passed unchanged.

Examples.

A packet which now converts to:  
WU2Z-9>APD213,WIDE,WIDE:@092142z4031.28N/07427.74Wv297/000/E>dsy/M0/Off duty.. ]"5g}

Will look like:

WU2Z-9>APD213,WIDE,WIDE:=4031.28N/07427.74Wv297/000/Mic-E/M0/Off duty.. ]"5g}

A non-Kenwood packet such as this:  
KD5AMB>APD213,OKCITY\*,WIDE:@092142z3532.83N/09736.94W>000/000/E>dsy/M0/Off duty.. PIC-E Moble testing  
mark@grennan.com

Becomes:  
KD5AMB>APD213,OKCITY\*,WIDE:!3532.83N/09736.94W>000/000/Mic-E/M0/Off duty.. PIC-E Moble testing  
mark@grennan.com

Comments ?

--

Dale Heatherington  
dale@wa4dsy.net  
Web Page <http://www.wa4dsy.net>  
Sent by KMail for Linux

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### 14. [aprrspec] Re: Proposed change to aprsd Mic-E converter

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>  
Date: Thu, 10 Aug 2000 10:36:56 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-101944-2000.08.10-12.43.14--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 10 Aug 2000, Dale Heatherington wrote:

```
> The next release of aprsd will have a couple of minor bug fixes and
> while I'm tinkering with the code I may as well modify the Mic-E converter
> so it doesn't have the time stamp. Bob suggested making the first information
> field character a "=" for Kenwoods because they are message capable and
> "!" for others. I also propose changing the "E>dsy" field to "Mic-E".

> A packet which now converts to:
> WU2Z-9>APD213,WIDE,WIDE:@092142z4031.28N/07427.74Wv297/000/E>dsy/M0/Off duty.. ]"5g}
>
> Will look like:
> WU2Z-9>APD213,WIDE,WIDE:=4031.28N/07427.74Wv297/000/Mic-E/M0/Off duty.. ]"5g}
```

YES! I've had to strip off the timestamps in my dupe-check code because each MIC-E expander adds it's own local timestamp. Excellent idea just getting rid of it.

I love the other changes too, except why have the "/Mic-E" part at all? It's evident to me that it's a MIC-E packet because of the "/M?" part of the packet.

My personal preference would still be to not have the MIC-E packet changed in any way by the igates or findu or whatever, but just have it decoded in the client programs. Since that is probably not forthcoming, the above changes will certainly improve things a lot.

Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
 Senior Methods Engineer/SysAdmin  
 "Lotto: A tax on people who are bad at math." -- unknown  
 "Windows: Microsoft's tax on computer illiterates." -- WE7U

---

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## 15. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
 Date: Thu, 10 Aug 2000 17:05:28 -0700  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Message-ID: <LYR11589-102018-2000.08.10-19.10.57--lyris.aprsspec#tapr.org@lists.tapr.org>  
 Rendered body type: text/plain

What programs do not handle Mic-E?  
 1) APRServe  
 2) others?? FindU??

APRSD handles Mic-E fine. All other client program that I know of handle Mic-E find. If we convert Mic-E to "=" or "!", we break the APRS protocol where by "=" and "!" indicate fixed stations. This is a bad idea...

I propose we eliminate ALL conversions of Mic-E. Changing APRSD does not change winAPRS or macAPRS or APRS+SA or APRServe. Changing only APRSD will only continue to propagate the duplicates. APRSD should never convert a packet it has not heard via RF directly. APRSD handles Mic-E fine. We need to address the programs that do not handle Mic-E, and that is only APRServe, correct? Fix that and the problem goes away. Perhaps, APRSD should be THE program for the Internet system, eliminating all APRServe sites. How many are there? Would a 486 be sufficient to run Linux for APRSD?

More comments?

Brent KH2Z

----- Original Message -----

From: "Dale Heatherington" <dale@wa4dsy.net>  
 To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
 Sent: Thursday, August 10, 2000 6:35 AM  
 Subject: [aprsspec] Proposed change to aprsd Mic-E converter

```
> The next release of aprsd will have a couple of minor bug fixes and
> while I'm tinkering with the code I may as well modify the Mic-E converter
> so it doesn't have the time stamp. Bob suggested making the first
information
> field character a "=" for Kenwoods because they are message capable and
> "!" for others. I also propose changing the "E>dsy" field to "Mic-E".
>
```

```

> The Mic-E comment field will be passed unchanged.
>
> Examples.
>
> A packet which now converts to:
> WU2Z-9>APD213,WIDE,WIDE:@092142z4031.28N/07427.74Wv297/000/E>dsy/M0/Off
duty.. ]"5g}
>
> Will look like:
>
> WU2Z-9>APD213,WIDE,WIDE:=4031.28N/07427.74Wv297/000/Mic-E/M0/Off
duty.. ]"5g}
>
>
> A non-Kenwood packet such as this:
> KD5AMB>APD213,OKCITY*,WIDE:@092142z3532.83N/09736.94W>000/000/E>dsy/M0/Off
duty.. PIC-E Moble testing mark@grennan.com
>
> Becomes:
> KD5AMB>APD213,OKCITY*,WIDE:!3532.83N/09736.94W>000/000/Mic-E/M0/Off duty..
PIC-E Moble testing mark@grennan.com
>
> Comments ?
>
> --
> Dale Heatherington
> dale@wa4dsy.net
> Web Page http://www.wa4dsy.net
> Sent by KMail for Linux
>
>
> ---
> You are currently subscribed to aprsspec as: bhildebrand@earthlink.net
> To unsubscribe send a blank email to leave-aprsspec-11589P@lists.taprr.org
> Questions regarding the SIG go to the SIG administrator: wallou@taprr.org
>
>

```

```

---
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```

## 16. [aprsspec] Re: Proposed change to aprsd Mic-E converter

```

From: Steve Dimse <sdimse@netrox.net>
Date: Thu, 10 Aug 2000 20:57:07 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.taprr.org>
Message-ID: <LYR11589-102024-2000.08.10-20.03.13--lyris.aprsspec#taprr.org@lists.taprr.org>
Rendered body type: text/plain

```

On 8/10/00 8:05 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

```

>What programs do not handle Mic-E?
>1) APRServe

```

APRServe handles Mic-E fine, though as Ian pointed out there are some things that could be improved with the conversion. If and when a standard is agreed to, and is implemented in aprsd I'll port Dale's procedure over, but this only affects things heard on RF, in the Social and Milwaukee areas.

Perhaps you have not noticed the dozen or more times I've addressed this issue, but APRServe is transparent to the non-printing characters used in the Mic-E. When the problem first surfaced, I took the blame for it, which turned out to be a mistake. The problem is in the clients (including my Mac-based test program...the cause of my misperception of guilt), not in APRServe, however despite the many times I've said this on the SIG, the perception still seems to be that APRServe is dropping the chars. However, when it is tested from a Linux client, the characters pass through fine.

Please, I've said this over and over, since I have found out it really isn't my fault. Can we put this urban myth to rest? Please???

```

>2) others?? FindU??
>

```

True, because it hears the data directly from aprsd, which converts all Mic-E packets, I didn't write code that would never be used.

Steve K4HG

---

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---

## 17. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Thu, 10 Aug 2000 18:05:31 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102027-2000.08.10-20.11.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I guess I have been asleep, I was still believing what you had said about APRServe in the past. No, I have not noticed dozens of times you said APRServe was not at fault. If APRServe and APRSD handle Mic-E correctly, then FIX the client programs that do not decode it correctly. Lets eliminate conversion of Mic-E everywhere. Converting them to "=" or "!" violates the APRS protocol.

Yes, lets change APRSD's method of converting Mic-E packets - eliminate the conversion.

Brent KH2Z

> On 8/10/00 8:05 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:  
>  
> >What programs do not handle Mic-E?  
> >1) APRServe  
>  
> APRServe handles Mic-E fine, though as Ian pointed out there are some  
> things that could be improved with the conversion. If and when a standard  
> is agreed to, and is implemented in aprsd I'll port Dale's procedure  
> over, but this only affects things heard on RF, in the Socal and  
> Milwaukee areas.  
>  
> Perhaps you have not noticed the dozen or more times I've addressed this  
> issue, but APRServe is transparent to the non-printing characters used in  
> the Mic-E. When the problem first surfaced, I took the blame for it,  
> which turned out to be a mistake. The problem is in the clients  
> (including my Mac-based test program...the cause of my misperception of  
> guilt), not in APRServe, however despite the many times I've said this on  
> the SIG, the perception still seems to be that APRServe is dropping the  
> chars. However, when it is tested from a Linux client, the characters  
> pass through fine.  
>  
> Please, I've said this over and over, since I have found out it really  
> isn't my fault. Can we put this urban myth to rest? Please???  
>  
> >2) others?? FindU??  
> >  
> True, because it hears the data directly from aprsd, which converts all  
> Mic-E packets, I didn't write code that would never be used.  
>  
> Steve K4HG  
>  
>

---

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---

## 18. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Steve Dimse <sdimse@netrox.net>  
Date: Thu, 10 Aug 2000 21:09:12 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102028-2000.08.10-20.15.09--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 8/10/00 9:05 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:



>I guess I have been asleep, I was still believing what you had said about  
>APRServe in the past. No, I have not noticed dozens of times you said  
>APRServe was not at fault. If APRServe and APRSD handle Mic-E correctly,  
>then FIX the client programs that do not decode it correctly.

It is not a decoding problem, but a communication problem. The  
non-printing chars are lost before they get to APRServe.

Steve K4HG

---

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---

## 19. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Thu, 10 Aug 2000 18:25:24 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-102033-2000.08.10-20.31.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The point is, it is a Client problem, not APRServe/APRSD. Fix the clients.  
Eliminate the conversion of Mic-E.

Brent

> On 8/10/00 9:05 PM Brent Hildebrand ([bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)) wrote:  
>  
> >I guess I have been asleep, I was still believing what you had said about  
> >APRServe in the past. No, I have not noticed dozens of times you said  
> >APRServe was not at fault. If APRServe and APRSD handle Mic-E  
correctly,  
> >then FIX the client programs that do not decode it correctly.  
>  
> It is not a decoding problem, but a communication problem. The  
> non-printing chars are lost before they get to APRServe.  
>  
> Steve K4HG

---

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---

## 20. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Bill Diaz <[billdiaz@megsinet.net](mailto:billdiaz@megsinet.net)>  
Date: Thu, 10 Aug 2000 20:31:32 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-102034-2000.08.10-20.37.34--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Ok, eliminate the conversions, AND fix the communications problems. If an  
application strips the non-printing characters after the conversions are  
eliminated, those applications won't be a problem for long.

Lets do as Brent suggests and stick with the spec. Creating ad-hoc fixes to  
the protocol is a recipe for disaster. That is how we ending up with the Mic-E  
duplicate mess to begin with. We still do not have a WRITTEN spec for  
conversions anyhow.

Bill KC9XG

On Thursday, August 10, 2000 8:09 PM, Steve Dimse [[SMTP:sdimse@netrox.net](mailto:SMTP:sdimse@netrox.net)]  
wrote:  
> On 8/10/00 9:05 PM Brent Hildebrand ([bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)) wrote:  
>  
> >I guess I have been asleep, I was still believing what you had said about  
> >APRServe in the past. No, I have not noticed dozens of times you said  
> >APRServe was not at fault. If APRServe and APRSD handle Mic-E correctly,  
> >then FIX the client programs that do not decode it correctly.  
>  
> It is not a decoding problem, but a communication problem. The

> non-printing chars are lost before they get to APRServe.  
>  
> Steve K4HG  
>  
> ---  
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---

## 21. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 11 Aug 2000 07:57:56 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102092-2000.08.11-07.13.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 10 Aug 2000, Curt Mills, WE7U wrote about Mic-E conversions

> I love the other changes too, except why have the "/Mic-E" part?

That field is my preference, because in APRSdos, I use that field to display the following four types of packets differently...

WU2Z-9>APD213,WIDE,WIDE:!4031.28N/07427.74Wv297/000/Mic-E/M0/Off duty..  
WU2Z-9>APD213,WIDE,WIDE:=4031.28N/07427.74Wv297/000/TH-D7/M0/Off duty..  
WU2Z-9>APD213,WIDE,WIDE:=4031.28N/07427.74Wv297/000/D-700/M0/Off duty..

I would prefer that Dale's conversion also do these insertions so that we can see what kind of station the guy is. It makes a difference as to whether you can send him a message or not...

de WB4APR, Bob

---  
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---

## 22. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 11 Aug 2000 08:51:03 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102093-2000.08.11-07.57.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 10 Aug 2000, Brent Hildebrand wrote:

> APRSD handles Mic-E fine. All other client program that I know of handle  
> Mic-E find. If we convert Mic-E to "=" or "!", we break the APRS protocol  
> where by "=" and "!" indicate fixed stations. This is a bad idea...

No, there should be no such association. "=" and "!" formats have always been for Position Reports \*without\* a time stamp. Although this has been usually applied to non-moving fixed stations, this is not the definition of the format. Yes, we even called it "fixed" stations, but that was a label of convenience, not a label of function...

These two formats were introduced in the 1996 time frame to avoid the problems with unsynchronized PC clock's for positions in which the exact time is not important. The Mic-E originates without a time stamp, so this is why we think conversion to the "=" and "!" timeless formats (if needed) is the way to go.

de WB4APR, Bob

---  
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## 23. [aprrspec] Re: Proposed change to aprsd Mic-E converter

From: Dale Heatherington <dale@wa4dsy.net>  
Date: Fri, 11 Aug 2000 10:03:12 -0400  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-102108-2000.08.11-09.17.33--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 10 Aug 2000, Brent Hildebrand wrote:

> Yes, lets change APRSD's method of converting Mic-E packets - eliminate the  
> conversion.  
>  
> Brent KH2Z

I'd sure like to do that if the side effects aren't too severe.

Regardless of whether the packets are conveted or not, the timestamps on Mic-E will be gone. What about the aprsd history dump? Users logging onto port 10151 will get n minutes of history including these old non-time stamped packets. Any potential problems there?

--

Dale Heatherington  
dale@wa4dsy.net  
Web Page <http://www.wa4dsy.net>  
Sent by KMail for Linux

---

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---

## 24. [aprrspec] SPEC NWS Warnings.

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Fri, 11 Aug 2000 10:42:20 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-102117-2000.08.11-09.48.48--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Allan has raised an issue by implying that the NWS WARNING messages used as an EXAMPLE in the SPEC are an affront to the INTERNATIONAL flavor of APRS. In looking at the spec, the causal reader might infer that it is another APRS FORMAT that is unique to the USA.

This is NOT THE CASE. The NWS format is not a special format and is just an example of the use of the STANDARD APRS MESSAGE for a special application. But this is not obvious to the uninformed reader.

Therefore to avoid such continuing criticism of the spec, I would suggest that the NWS WARNING PARAGRAPH be re-worded as follows:

NATIONAL WEATHER SERVICE BULLETINS:

Standard APRS message formats can be used for a variety of other applications. For example, in the USA, special formatted messages addressed to the generic callsign of NWS-XXXX are used to color highlight map areas involved in weather warnings using the following format....

-----

This clarifies that this is NOT another unique format, but is simply another message. By including it as an example, we are showing how the APRS MESSAGE protocol is NON-RESTRICTIVE and has INFINITE EXPANSION capabilities for other applications.

Bob

---

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## 25. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>  
Date: Fri, 11 Aug 2000 09:12:02 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102132-2000.08.11-11.18.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Thu, 10 Aug 2000, Brent Hildebrand wrote:

```
> Yes, lets change APRSD's method of converting Mic-E packets - eliminate the
> conversion.
```

Yes please! This is the RIGHT way to do things. The others are just patches. 8-bit transparent networking code is not particularly hard to write these days.

Let's also fix the client programs so that they set:

```
afilter off
mfilter 0
```

for AEA TNC's while we're at it, so we can get those non-printable characters passed through those TNC's. That'll fix a few of the clients that are running older TNC's (like me!).

```
Curt Mills, WE7U                                     hacker.NO_*SPAM@tc.fluke.com
Senior Methods Engineer/SysAdmin
"Lotto:   A tax on people who are bad at math." -- unknown
"Windows: Microsoft's tax on computer illiterates." -- WE7U
```

— — —

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

## 26. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>  
Date: Fri, 11 Aug 2000 09:31:36 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102137-2000.08.11-11.37.52--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Dale Heatherington wrote:

```
> I'd sure like to do that if the side effects aren't too severe.
>
> Regardless of whether the packets are conveted or not, the timestamps
> on Mic-E will be gone.  What about the aprsd history dump?  Users logging
> onto port 10151 will get n minutes of history including these old non-time stamped
> packets.  Any potential problems there?
```

That should be easily fixed too with a bit of code (isn't it always "just a bit more code"?):

For your history queue, add a time stamp in some format that is unique to you and easy for the C++ code to recognize/strip off again. It can be stripped off as the packet is being sent to a client, but used internally to aprsd to expire the data out of the queue.

I don't implement the 30-second history, but here's how I'm doing the 30-second dupe-check queue: I use a reduced form of the packet itself as the hash key (removed digi's, removed timestamps, removed white space). I store seconds-since-Unix-epoch as the value of the hash entry. With this method I save the time that -I- received the packet as the timestamp (ignoring the timestamp in the packet itself), and keep it as a separate variable from the packet data. So far this has worked well. It doesn't matter whether the packet has a timestamp or not as I'm generating and keeping my own timestamps internally. An added feature of this is the varying timestamps in MIC-E expansions don't affect my dupe-checking. I can treat the hash as a circular queue to expire old data, or treat it as a hash to find out if I just received a duplicate. In my code I do both.

---  
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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

## 27. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>  
Date: Fri, 11 Aug 2000 09:39:20 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102141-2000.08.11-11.45.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Steve Dimse K4HG wrote:

```
> Before this happens a few things ought to occur. First, someone needs to
> test all the client programs to determine which ones need to be updated.
> Then those programs must be updated, and those new versions widely
> distributed.
>
> To eliminate the conversions before this is done would result in a large
> number of erroneous positions on the internet feed, a situation far worse
> than that we have today.
```

And pressure would be exerted on the authors to update their programs. Could be a bad thing overall, could be a good thing. It would hurt temporarily until it was healed though.

```
> Who wants to volunteer to test all the client programs?
```

Perhaps the authors of the individual programs and their individual groups of beta-testers?

I'll help test and fix Xastir if it needs it. I think that's the only client source code I have access to and care to run.

```
Curt Mills, WE7U                                     hacker.NO_*SPAM@tc.fluke.com
Senior Methods Engineer/SysAdmin
"Lotto:   A tax on people who are bad at math." -- unknown
"Windows: Microsoft's tax on computer illiterates." -- WE7U
```

---  
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Questions regarding the SIG go to the SIG administrator: [wailou@tapr.org](mailto:wailou@tapr.org)

## 28. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Steve Dimse K4HG <sdimse@netrox.net>  
Date: Fri, 11 Aug 2000 12:45:39 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102143-2000.08.11-11.51.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 8/11/00 12:31 PM Curt Mills, WE7U (hacker@tc.fluke.com) wrote:

```
>That should be easily fixed too with a bit of code (isn't it always
>"just a bit more code?"):
>
>For your history queue, add a time stamp in some format that is
>unique to you and easy for the C++ code to recognize/strip off
>again. It can be stripped off as the packet is being sent to a
>client, but used internally to aprsd to expire the data out of the
>queue.
```

I think you misread Dale's question. He does not use it, he uses his own time field. The question was how would this affect the clients? My guess is not at all, the timestamps on APRS packets are worthless because of

all the troubles with people incorrectly setting their clocks.

findu totally ignores them, using only the time received.

Steve K4HG

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 29. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Steve Dimse K4HG <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Fri, 11 Aug 2000 12:45:45 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-102144-2000.08.11-11.51.56--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-102144-2000.08.11-11.51.56--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 8/11/00 12:12 PM Curt Mills, WE7U ([hacker@tc.fluke.com](mailto:hacker@tc.fluke.com)) wrote:

>> Yes, lets change APRSD's method of converting Mic-E packets - eliminate the  
>> conversion.

>

>Yes please! This is the RIGHT way to do things. The others are  
>just patches. 8-bit transparent networking code is not particularly  
>hard to write these days.

>

Before this happens a few things ought to occur. First, someone needs to  
test all the client programs to determine which ones need to be updated.  
Then those programs must be updated, and those new versions widely  
distributed.

To eliminate the conversions before this is done would result in a large  
number of erroneous positions on the internet feed, a situation far worse  
than that we have today.

Who wants to volunteer to test all the client programs?

Steve K4HG

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 30. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: "Curt Mills, WE7U" <[hacker@tc.fluke.com](mailto:hacker@tc.fluke.com)>  
Date: Fri, 11 Aug 2000 09:47:01 -0700 (PDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-102145-2000.08.11-11.53.06--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-102145-2000.08.11-11.53.06--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Steve Dimse K4HG wrote:

> I think you misread Dale's question. He does not use it, he uses his own  
> time field. The question was how would this affect the clients? My guess  
> is not at all, the timestamps on APRS packets are worthless because of  
> all the troubles with people incorrectly setting their clocks.

Are you sure? Here's what Dale wrote again:

> Regardless of whether the packets are converted or not, the timestamps  
> on Mic-E will be gone. What about the aprsd history dump? Users logging  
> onto port 10151 will get n minutes of history including these old non-time stamped  
> packets. Any potential problems there?

He specifically mentioned port 10151, which has a 30-second history  
queue normally. Port 10152 does not, it's live data only.

Since he wouldn't be expanding the MIC-E to have a timestamp, it  
sounds from the above that he would have old MIC-E packets hanging  
around in his history queue forever (not getting expired out). They  
would be downloaded to the client program when they connect.

That's why I went into the spiel about how my dupe-check queue worked.

Did I understand you correctly Dale? If not, I need to get more of

```
Curt Mills, WE7U                                     hacker.NO_*SPAM@tc.fluke.com
Senior Methods Engineer/SysAdmin
"Lotto:   A tax on people who are bad at math." -- unknown
"Windows: Microsoft's tax on computer illiterates." -- WE7U
```

### 31. [aprsspec] Re: Proposed change to aprsd Mic-E converter

```

On Fri, 11 Aug 2000, Curt Mills, WE7U wrote:
> On Fri, 11 Aug 2000, Steve Dimse K4HG wrote:
>
> > I think you misread Dale's question. He does not use it, he uses his own
> > time field. The question was how would this affect the clients? My guess
> > is not at all, the timestamps on APRS packets are worthless because of
> > all the troubles with people incorrectly setting their clocks.
>
>
> Are you sure? Here's what Dale wrote again:
>
> > Regardless of whether the packets are conveted or not, the timestamps
> > on Mic-E will be gone. What about the aprsd history dump? Users logging
> > onto port 10151 will get n minutes of history including these old non-time stamped
> > packets. Any potential problems there?
>
> He specifically mentioned port 10151, which has a 30-second history
> queue normally. Port 10152 does not, it's live data only.
>
> Since he wouldn't be expanding the MIC-E to have a timestamp, it
> sounds from the above that he would have old MIC-E packets hanging
> around in his history queue forever (not getting expired out). They
> would be downloaded to the client program when they connect.
>
> That's why I went into the speil about how my dupe-check queue worked.
>
> Did I understand you correctly Dale? If not, I need to get more of
> this diet pepsi into the bloodstream this morning.
>
> Curt Mills, WE7U                                     hacker.NO_*SPAM@tc.fluke.com
> Senior Methods Engineer/SysAdmin
> "Lotto: A tax on people who are bad at math." -- unknown
> "Windows: Microsoft's tax on computer illiterates." -- WE7U
--
Dale Heatherington
dale@wa4dsy.net
Web Page http://www.wa4dsy.net
Sent by KMail for Linux

```

### 32. [aprsspec] Re: Proposed change to aprsd Mic-E converter

Page 679

Cc: Steve Dimse K4HG <sdimse@bridge.net>,  
APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102151-2000.08.11-12.37.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Dale Heatherington wrote:

> Steve is correct. All the history packets are timestamped with both  
> unix time and a (now redundant) time to live value. Also, the latest version of aprsd  
> uses a completely separate method to do dup checking. I was indeed  
> concerned about user programs getting old, untimestamped Mic-E data from the  
> history buffer when they log on. Some aprsd operators set the history expire  
> time to as much as 8 hours.  
>  
> On Fri, 11 Aug 2000, Curt Mills, WE7U wrote:  
> >  
> > Are you sure? Here's what Dale wrote again:  
> >  
> > > Regardless of whether the packets are conveted or not, the timestamps  
> > > on Mic-E will be gone. What about the aprsd history dump? Users logging  
> > > onto port 10151 will get n minutes of history including these old non-time stamped  
> > > packets. Any potential problems there?

So where's the problem? If you're time-stamping everything in the history with unix time, everthing gets expired from the history queue properly in any case. Aprsd is already written correctly and would require no tweaks other than getting rid of the MIC-E expansion.

If users are connecting up to an internet server on a port that provides history, they should know by now that the client program aging of packets might not be correct. Xastir already works that way I think. It ages the icons based on when it received them, not based on their timestamps. Perhaps the other client programs actually check the timestamp? If so, then I see where my confusion comes from.

Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
Senior Methods Engineer/SysAdmin  
"Lotto: A tax on people who are bad at math." -- unknown  
"Windows: Microsoft's tax on computer illiterates." -- WE7U

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---

### 33. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Dale Heatherington <dale@wa4dsy.net>  
Date: Fri, 11 Aug 2000 14:47:23 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: Steve Dimse K4HG <sdimse@bridge.net>,  
APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-102164-2000.08.11-14.00.19--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Curt Mills, WE7U wrote:

> On Fri, 11 Aug 2000, Dale Heatherington wrote:  
>  
> > Steve is correct. All the history packets are timestamped with both  
> > unix time and a (now redundant) time to live value. Also, the latest version of aprsd  
> > uses a completely separate method to do dup checking. I was indeed  
> > concerned about user programs getting old, untimestamped Mic-E data from the  
> > history buffer when they log on. Some aprsd operators set the history expire  
> > time to as much as 8 hours.  
> >  
> > On Fri, 11 Aug 2000, Curt Mills, WE7U wrote:  
> > >  
> > > Are you sure? Here's what Dale wrote again:  
> > >  
> > > > Regardless of whether the packets are conveted or not, the timestamps  
> > > > on Mic-E will be gone. What about the aprsd history dump? Users logging  
> > > > onto port 10151 will get n minutes of history including these old non-time stamped  
> > > > packets. Any potential problems there?  
> >  
> > So where's the problem? If you're time-stamping everything in the  
> > history with unix time, everthing gets expired from the history queue  
> > properly in any case. Aprsd is already written correctly and would  
> > require no tweaks other than getting rid of the MIC-E expansion.



Hopefully there are no problems or side effects.  
This is almost never the case in the real world however.  
I asked the question to see if anyone could come up with potential pitfalls.

Here's another question: When an unconverted Mic-E pkt is gated from internet to RF as a 3rd party reformatted packet, will the client software properly extract the posit data from the ax25 destination field ?

--  
Dale Heatherington  
dale@wa4dsy.net  
Web Page <http://www.wa4dsy.net>  
Sent by KMail for Linux

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

### 34. [aprsspec] Re: Proposed change to aprsd Mic-E converter

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 11 Aug 2000 16:06:01 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>, Steve Dimse K4HG <[sdimse@bridge.net](mailto:sdimse@bridge.net)>  
Message-ID: <LYR11589-102174-2000.08.11-15.12.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Dale Heatherington wrote:

> Here's another question: When an unconverted Mic-E pkt is gated from internet to RF as  
> a 3rd party reformatted packet, will the client software properly extract the  
> posit data from the ax25 destination field ?

APRSdos will. The 3rd party format is totally recursive in APRSdos  
bob

---  
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---

### 35. [aprsspec] proposed change aprsd Mic-E converter

From: Dale Heatherington <[dale@wa4dsy.net](mailto:dale@wa4dsy.net)>  
Date: Fri, 11 Aug 2000 15:56:02 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-102175-2000.08.11-15.20.31--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

To convert or not convert, that is the question.

It turned out to be trivial to put in a new keyword in aprsd.conf.  
ConvertMicE yes | no  
The actual code to select convert or not was also trivial.

Now the I need to decide if the default should be "yes" or "no"  
if "ConvertMicE" does not appear in the config file.

The 3rd party reformatting also seems to work.

Original packets:

```
WA4DSY>0000P0:`vX      >/      (0x1c)
WA4DSY>675900:`012345>/
WA4DSY>PPQRST:`012345>/
```

ConvertMicE no

```
Sending to TNC: }WA4DSY>0000P0,TCPIP*,WA4DSY-1*:`vX      >/      (0x1c)
Sending to TNC: }WA4DSY>675900,TCPIP*,WA4DSY-1*:`012345>/
Sending to TNC: }WA4DSY>PPQRST,TCPIP*,WA4DSY-1*:`012345>/
```

ConvertMicE yes

Sending to TNC: }WA4DSY>APD214,TCPIP\*,WA4DSY-1\*:!0000.00S/00000.00E>004/040/Mic-E/M7/EMERGENCY.  
(0x1c)  
Sending to TNC: }WA4DSY>APD214,TCPIP\*,WA4DSY-1\*:!6759.00S/02021.22E>025/232/Mic-E/M7/EMERGENCY.  
Sending to TNC: }WA4DSY>APD214,TCPIP\*,WA4DSY-1\*:!0012.34N/12021.22W>025/232/Mic-E/M0/Off duty..

--  
Dale Heatherington  
dale@wa4dsy.net  
Web Page <http://www.wa4dsy.net>  
Sent by KMail for Linux

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---

### 36. [aprsspec] Spec Error?

From: "Curt Mills, WE7U" <[hacker@tc.fluke.com](mailto:hacker@tc.fluke.com)>  
Date: Fri, 11 Aug 2000 14:59:08 -0700 (PDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-102194-2000.08.11-17.05.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Looking at the last APRS spec that I downloaded, the example for a compressed object is not correct per the text. The example has no time field, but the text says it is required. Hopefully someone else has caught this before now.

Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
Senior Methods Engineer/SysAdmin  
"Lotto: A tax on people who are bad at math." -- unknown  
"Windows: Microsoft's tax on computer illiterates." -- WE7U

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---

### 37. [aprsspec] Re: Spec Error?

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Fri, 11 Aug 2000 23:43:25 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-102242-2000.08.11-22.49.56--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Curt Mills, WE7U wrote:

> Looking at the last APRS spec that I downloaded, the example for  
> a compressed object is not correct per the text. The example  
> has no time field, but the text says it is required. Hopefully  
> someone else has caught this before now.

The compressed format only covers the LAT/LONG and CST fields 'wherever' they occur. Thus they can be with or without time fields.

Bob

>  
> Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
> Senior Methods Engineer/SysAdmin  
> "Lotto: A tax on people who are bad at math." -- unknown  
> "Windows: Microsoft's tax on computer illiterates." -- WE7U  
>  
>  
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>  
>

APRSDOS REPLY/COMMENT:

Reply mail addr: [wb4apr@amsat.org](mailto:wb4apr@amsat.org)  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060

See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

### 38. [aprsspec] Re: Spec Error?

From: [archer@eskimo.com](mailto:archer@eskimo.com)  
Date: Fri, 11 Aug 2000 22:02:08 -0700 (PDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-102265-2000.08.12-00.04.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000, Bob Bruninga wrote:

> On Fri, 11 Aug 2000, Curt Mills, WE7U wrote:  
>  
> > Looking at the last APRS spec that I downloaded, the example for  
> > a compressed object is not correct per the text. The example  
> > has no time field, but the text says it is required. Hopefully  
> > someone else has caught this before now.  
>  
> The compressed format only covers the LAT/LONG and CST fields 'wherever'  
> they occur. Thus they can be with or without time fields.

Don't discount this so quickly Bob! Read the spec for "Objects" using the compressed lat/lon. The "Object" text specifies that a timestamp is REQUIRED. The example in the table shows an object WITHOUT a timestamp. Either the text or the example is incorrect. Not a big deal, but it IS incorrect.

Curt, WE7U. [BowHunter@mail.com](mailto:BowHunter@mail.com)  
<http://www.eskimo.com/~archer>  
Lotto: A tax on people who are bad at math. - unknown  
Windows: Microsoft's tax on computer illiterates. - WE7U.

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

### 39. [aprsspec] Re: Spec Error?

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 12 Aug 2000 22:19:44 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-102369-2000.08.12-21.26.28--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Fri, 11 Aug 2000 [archer@eskimo.com](mailto:archer@eskimo.com) wrote:

> > The compressed format only covers the LAT/LONG and CST fields 'wherever'  
> > they occur. Thus they can be with or without time fields.  
>  
> Don't discount this so quickly Bob! Read the spec for "Objects" using  
> the compressed lat/lon. The "Object" text specifies that a timestamp  
> is REQUIRED. The example in the table shows an object WITHOUT a  
> timestamp. Either the text or the example is incorrect. Not a big  
> deal, but it IS incorrect.

Thanks! Yes, the OBJECT format does require a time stamp. So I agree, the example is bad...

---

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---

### 40. [aprsspec] NEW! aprsd 2.1.4 available

From: Dale Heatherington <[dale@wa4dsy.net](mailto:dale@wa4dsy.net)>  
Date: Sat, 19 Aug 2000 16:24:17 -0400

To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-103654-2000.08.19-15.37.58--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

A new version of aprsd is available at:  
<http://www.wa4dsy.net/Files/aprsd214.tar.gz>

The doc file can be viewed at:  
<http://www.wa4dsy.net/aprs/aprsdDOC.html>

The most notable change is the server defaults to NOT converting Mic-E packets to classic APRS format. The Sysop can elect to convert if he needs to.

Here is a list of the changes:

-----  
REVISIONS

2.1.4

1) Fixed DeleteSession() so it can't delete if port number is -1 and made ConnectedClients a signed integer. Hopefully this will prevent errors in the user count.

2) The dup detector now ignores trailing spaces

3) Put Location info on the html status page

4) Deal with mic-e timestamps as per this email from Bob on Aug 3 2000.

"We should not have included the timestamp when the conversion was done by an IGate just for the reasons that we dropped the time stamp in all other stations back in 1996.

It was a mistake and we should fix it by simply replacing the "@DDHHMMz" portion of the conversion with a "!" for TAPR Mic-E's and to a "=" format for Message capable Mic-E's (Kenwoods). This would eliminate this nuisance immediately. "

5) Fixed bug in HUB connection logic that caused it to advance by two instead of one after attempting to connect to a hub that was down. If only 2 hubs were defined it would always retry the same dead hub over and over.

6) Added command "LogAllRF" to aprsd.conf. When set to "yes" all packets heard from the TNC will be written to /aprsd2/rf.log instead of only packets with our call sign as was the case.

7) Added keyword "ConvertMicE yes | no" to aprsd.conf file. If this is set to "yes" Mic-E packets will be converted to classic APRS packets, otherwise they will pass through unchanged. Default is "no".

8) Cleaned up some code in history.cpp: createHistoryArray(aprsString\* hp) so it now aborts a history dump if memory allocation fails. The original code ignored a malloc failure.

--  
Dale Heatherington  
dale@wa4dsy.net  
Web Page <http://www.wa4dsy.net>  
Sent by KMail for Linux

---  
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---

## 41. [aprsspec] Re: NEW! aprsd 2.1.4 available

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Sat, 19 Aug 2000 13:44:38 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-103658-2000.08.19-15.51.08--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

I applaud the step in making Mic-E conversion optional; I feel it should be eliminated. I think it is wrong to change the conversion of Mic-E to type "=". It has long been stated that type "=" is a fixed station type, and I strongly feel it should be still considered a fixed station type with computer.

Mobile computers are of type "@" and the timestamp is acquired from a GPS receiver and thus provides very good accuracy for the timestamp. Fixed computers do not move, do not need to have a GPS receiver and should have a way to indicate this. Calling "=" type packets not fixed is protocol revisionism, and is now being applied Mic-E converted packets. It has been clearly stated in the past the "=" was for fixed stations. By having APRSD convert Mic-E to "=" will only compound the conversion problems because this does not change the way APRS+SA or WinAPRS or other client program converts the packets. Fortunately, the default is to not convert them.

Final side note, APRSD appears to be 8-bit data compatible, APRServe is 7-bit. Both do appear however to handle Mic-E data OK.

Brent KH2Z

----- Original Message -----

From: Dale Heatherington <dale@wa4dsy.net>  
To: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Sent: Saturday, August 19, 2000 1:24 PM  
Subject: [aprsspec] NEW! aprsd 2.1.4 available

> A new version of aprsd is available at:  
> <http://www.wa4dsy.net/Files/aprsd214.tar.gz>  
>  
> The doc file can be viewed at:  
> <http://www.wa4dsy.net/aprs/aprsdDOC.html>  
>  
> The most notable change is the server defaults to NOT converting  
> Mic-E packets to classic APRS format. The Sysop can elect to convert  
> if he needs to.  
>  
> Here is a list of the changes:  
>  
> -----  
> REVISIONS  
>  
> 2.1.4  
>  
> 1) Fixed DeleteSession() so it can't delete if port number is -1  
> and made ConnectedClients a signed integer. Hopefully this will  
> prevent errors in the user count.  
>  
> 2) The dup detector now ignores trailing spaces  
>  
> 3) Put Location info on the html status page  
>  
> 4) Deal with mic-e timestamps as per this email from Bob on Aug 3 2000.  
>  
> "We should not have included the timestamp when the conversion was done by  
> an IGate just for the reasons that we dropped the time stamp in all other  
> stations back in 1996.  
>  
> It was a mistake and we should fix it by simply replacing the "@DDHHMMz"  
> portion of the conversion with a "!" for TAPR Mic-E's and to a "="  
> format for Message capable Mic-E's (Kenwoods). This would eliminate this  
> nuisance immediately. "  
>  
> 5) Fixed bug in HUB connection logic that caused it to advance by two instead of one  
> after attempting to connect to a hub that was down. If only 2 hubs were defined  
> it would always retry the same dead hub over and over.  
>  
> 6) Added command "LogAllRF" to aprsd.conf. When set to "yes" all packets heard from the TNC  
> will be written to /aprsd2/rf.log instead of only packets with our call sign as was the case.  
>  
> 7) Added keyword "ConvertMicE yes | no" to aprsd.conf file. If this is set to "yes"  
> Mic-E packets will be converted to classic APRS packets, otherwise they will pass  
> through unchanged. Default is "no".  
>  
> 8) Cleaned up some code in history.cpp: createHistoryArray(aprsString\* hp) so it now  
> aborts a history dump if memory allocation fails. The original code ignored a malloc failure.  
>  
> --  
> Dale Heatherington  
> dale@wa4dsy.net  
> Web Page <http://www.wa4dsy.net>

> Sent by KMail for Linux  
>  
>  
> ---  
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> Questions regarding the SIG go to the SIG administrator: wallou@tapir.org  
>  
>

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---

## 42. [aprsspec] Re: NEW! aprsd 2.1.4 available

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sat, 19 Aug 2000 17:03:10 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-103660-2000.08.19-16.11.07--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On Sat, 19 Aug 2000, Brent Hildebrand wrote:

> I think it is wrong to change the conversion of Mic-E to type "=". It  
> has long been stated that type "=" is a fixed station type, and I  
> strongly feel it should be still considered a fixed station type with  
> computer.

APRS format \*type\* characters (!/=) do \*not\* specify types of stations,  
they specify ONLY the \*format\* of the packet. The "=" \*type\* simply means  
a format without a TIME STAMP. It has nothing to do with the type of  
station and it never did.

> Mobile computers are of type "@" and the timestamp is acquired from a  
> GPS receiver and thus provides very good accuracy for the timestamp.

Sorry, you got it backwards. Mobiles use the "@" format because they are  
going to include the time stamp, not because they are mobiles.

> Fixed computers do not move, do not need to have a GPS receiver and  
> should have a way to indicate this. Calling "=" type packets not fixed  
> is protocol revisionism, and is now being applied to Mic-E converted  
> packets. It has been clearly stated in the past the "=" was for fixed  
> stations.

I am sorry, but nothing has been revised, only you are now finding out  
that your "interpretation" must have been wrong all along. The "=" format  
was always defined to be a \*format identifier\* for a position report  
without a time stamp. It had nothing to do with the type of station. I  
am sorry if you misinterpreted it.

This "=" format happened to be very appropriate and was used for FIXED  
stations where the time stamp was usually useless... but the \*type\*  
of packet never "defined" a \*type\* of station. Yes, we all agreed that it  
made sense for FIXED stations to use this format, but not the reverse.

Bob

---  
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---

## 43. [aprsspec] Re: NEW! aprsd 2.1.4 available

From: Steve Dimse K4HG <sdimse@netrox.net>  
Date: Sat, 19 Aug 2000 17:13:52 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-103662-2000.08.19-16.20.18--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

On 8/19/00 4:44 PM Brent Hildebrand (bhildebrand@earthlink.net) wrote:

>I applaud the step in making Mic-E conversion optional; I feel it should

APRServe will continue to do it, and [www.aprs.net](http://www.aprs.net) will have the aprsd option turned on. Regardless of what may be "pure", the reality is there are clients that are not able to handle the data. I feel that backwards compatibility is important, and until all versions of the program have been verified to be able to send and receive the Mic-E data, I will continue to do the conversion at the network level.

This would be a nice task for an individual to take on, to test each version against the Mic-E data...

>be eliminated. I think it is wrong to change the conversion of Mic-E to  
>type "=". It has long been stated that type "=" is a fixed station type,  
>and I strongly feel it should be still considered a fixed station type  
>with computer. Mobile computers are of type "@" and the timestamp is  
>acquired from a GPS receiver and thus provides very good accuracy for the  
>timestamp. Fixed computers do not move, do not need to have a GPS

My recollection is the same as Bob's on this point. I do not recall the difference ever being defined as fixed vs. mobile, only timestamp vs no timestamp.

>Final side note, APRSD appears to be 8-bit data compatible, APRServe is  
>7-bit. Both do appear however to handle Mic-E data OK.

>  
Nice to have independent confirmation, perhaps this will put the  
persistant rumors that it is APRServe's fault to rest...

The 7 bit limitation is deliberate on my part, as APRServe is designed to handle TNC text only, the 8th bit is masked off on each character. It could be removed easily if there ever were a reason to pass 8 bit data.

Steve K4HG

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

#### 44. [aprsspec] Re: NEW! aprsd 2.1.4 available

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Sat, 19 Aug 2000 14:36:38 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103664-2000.08.19-16.44.23--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103664-2000.08.19-16.44.23--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> > Fixed computers do not move, do not need to have a GPS receiver and  
> > should have a way to indicate this. Calling "=" type packets not fixed  
> > is protocol revisionism, and is now being applied to Mic-E converted  
> > packets. It has been clearly stated in the past the "=" was for fixed  
> > stations.  
>  
> I am sorry, but nothing has been revised, only you are now finding out  
> that your "interpretation" must have been wrong all along. The "=" format  
> was always defined to be a \*format identifier\* for a position report  
> without a time stamp. It had nothing to do with the type of station. I  
> am sorry if you missinterpreted it.

We have called it fixed, you have called it fixed. It is appropriate to call it fixed because the implications of using "=" without a timestamp was because it was for stations that would not change their Lat/Long frequently. Now the only way to differentiate a fixed vs mobile station is to observe that there are more the Lat/Long for the station. So be it. But I think it is wrong.

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

#### 45. [aprsspec] Re: NEW! aprsd 2.1.4 available

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Sat, 19 Aug 2000 14:44:16 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103665-2000.08.19-16.50.34--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103665-2000.08.19-16.50.34--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> >be eliminated. I think it is wrong to change the conversion of Mic-E to  
> >type "=". It has long been stated that type "=" is a fixed station type,  
> >and I strongly feel it should be still considered a fixed station type  
> >with computer. Mobile computers are of type "@" and the timestamp is

> >acquired from a GPS receiver and thus provides very good accuracy for the  
> >timestamp. Fixed computers do not move, do not need to have a GPS  
>  
> My recollection is the same as Bob's on this point. I do not recall the  
> difference ever being defined as fixed vs. mobile, only timestamp vs no  
> timestamp.

I will quote Bob from just a week ago:

"No, there should be no such association. "=" and "!" formats have always been for Position Reports \*without\* a time stamp. Although this has been usually applied to non-moving fixed stations, this is not the definition of the format. Yes, we even called it "fixed" stations, but that was a label of convenience, not a label of function..."

Yes, we have called it Fixed stations. "=" Fixed stations with computers, "!" Fixed stations without computers. We have used this terminology in discussions for a long time.

Brent KH2Z

---

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---

## 46. [aprsspec] Re: NEW! aprsd 2.1.4 available

From: Steve Dimse K4HG <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Sat, 19 Aug 2000 17:50:09 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103666-2000.08.19-16.56.36--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103666-2000.08.19-16.56.36--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 8/19/00 5:44 PM Brent Hildebrand ([bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)) wrote:

>I will quote Bob from just a week ago:  
>  
>"No, there should be no such association. "=" and "!" formats have always  
>been for Position Reports \*without\* a time stamp. Although this has been  
>usually applied to non-moving fixed stations, this is not the definition  
>of the format. Yes, we even called it "fixed" stations, but that was a  
>label of convenience, not a label of function..."  
>  
>Yes, we have called it Fixed stations. "=" Fixed stations with  
>computers, "!" Fixed stations without computers. We have used this  
>terminology in discussions for a long time.  
>  
But @ has been used all along for weather reports from fixed stations. My recollection remains that these were not limited to either mobile or fixed use, only as to weather the data was time related.

Steve K4HG

---

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---

## 47. [aprsspec] Re: NEW! aprsd 2.1.4 available

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Sat, 19 Aug 2000 15:03:14 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103668-2000.08.19-17.09.36--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103668-2000.08.19-17.09.36--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> On 8/19/00 5:44 PM Brent Hildebrand ([bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)) wrote:  
>  
> >I will quote Bob from just a week ago:  
> >  
> >"No, there should be no such association. "=" and "!" formats have always  
> >been for Position Reports \*without\* a time stamp. Although this has been  
> >usually applied to non-moving fixed stations, this is not the definition  
> >of the format. Yes, we even called it "fixed" stations, but that was a  
> >label of convenience, not a label of function..."  
> >  
> >Yes, we have called it Fixed stations. "=" Fixed stations with  
> >computers, "!" Fixed stations without computers. We have used this  
> >terminology in discussions for a long time.  
> >



> But @ has been used all along for weather reports from fixed stations. My  
> recollection remains that these were not limited to either mobile or  
> fixed use, only as to weather the data was time related.

Yes, that is true. I have felt we should have a unique identifier for WX packets, but we have not agreed on that with using both "@" and "-" type packets for weather where the latter provides no additional information over the prior. I still strongly feel that the timeless packet types should be reserved for fixed stations, it adds useful information that can allow quick determination of a stations type. Moving stations have (should) ready access to a very accurate time source.

Brent KH2Z

---

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---

## 48. [aprsspec] APRSd/APRServe NETWORK MAP

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 19 Aug 2000 18:01:53 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103670-2000.08.19-17.11.24--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103670-2000.08.19-17.11.24--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

As APRSd and APRServe represent the global APRS INTERNET network, and IGates come and go all the time, I am finding myself increasingly confused as to what the real "aprserve" network is.

Each APRSd provides a WEB interface to see what other systems it is connected to, but wouldn't you have to be a worm to crawl through every possible connection to see what the big picture was at any instant?

What would really be neat would be a LIVE WORLD map showing all active IGates, with directional arrows between them showing the types of links.

Am I dreaming? (or is it already done somewhere?)

Since we are SO DEPENDENT on the infrastructure created by Steve and Dale and Brent and Sprouls, and others and our future depends on the reliability of this INTERNET network, I hope that we can come up with this big-picture LIVE INTERNET map as a way of keeping our fingers on the pulse... of the "network"

? de WB4APR, Bob ?

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 49. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: Steve Dimse K4HG <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Sat, 19 Aug 2000 18:18:13 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103671-2000.08.19-17.25.01--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103671-2000.08.19-17.25.01--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 8/19/00 6:01 PM Bob Bruninga ([bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)) wrote:

>As APRSd and APRServe represent the global APRS INTERNET network, and  
>IGates come and go all the time, I am finding myself increasingly  
>confused as to what the real "aprserve" network is.

>

>Each APRSd provides a WEB interface to see what other systems it is  
>connected to, but wouldn't you have to be a worm to crawl through every  
>possible connection to see what the big picture was at any instant?

>

The web status was added in 2.1.3 I believe, many IGates are running older versions. In addition, when people upgrade they must manually edit their config file to enable the feature, so many of those who are using the latest version do not have this enabled.

If you ever do succeed to produce such an image, it would be a horrible

mass of spaghetti, as many IGate are configured in strange and wonderful ways!

Steve K4HG

---

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---

## 50. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: Dale Heatherington <[dale@wa4dsy.net](mailto:dale@wa4dsy.net)>  
Date: Sat, 19 Aug 2000 18:57:54 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103678-2000.08.19-18.08.26--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103678-2000.08.19-18.08.26--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

FYI, the aprsd web interface is enabled by default. The sysop must modify his aprsd.conf to disable it. Versions 2.1.2 and up have it.

The real barrier to making the map is the lack of lat/lon info of the aprsd igate in the status page. This could be added but would require one or more new entires in the aprsd.conf file.

On Sat, 19 Aug 2000, Steve Dimse K4HG wrote:

> On 8/19/00 6:01 PM Bob Bruninga ([bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)) wrote:  
>  
> >As APRSd and APRServe represent the global APRS INTERNET network, and  
> >Igates come and go all the time, I am finding myself increasingly  
> >confused as to what the real "aprserve" network is.  
> >  
> >Each APRSd provides a WEB interface to see what other systems it is  
> >connected to, but wouldn't you have to be a worm to crawl through every  
> >possible connection to see what the big picture was at any instant?  
> >  
> The web status was added in 2.1.3 I believe, many IGates are running  
> older versions. In addition, when people upgrade they must manually edit  
> their config file to enable the feature, so many of those who are using  
> the latest version do not have this enabled.  
>  
> If you ever do succeed to produce such an image, it would be a horrible  
> mass of spaghetti, as many IGate are configured in strange and wonderful  
> ways!  
>  
> Steve K4HG  
>  
> ---  
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> Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)  
>  
--

Dale Heatherington  
[dale@wa4dsy.net](mailto:dale@wa4dsy.net)  
Web Page <http://www.wa4dsy.net>  
Sent by KMail for Linux

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 51. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sat, 19 Aug 2000 20:38:09 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103687-2000.08.19-19.44.59--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103687-2000.08.19-19.44.59--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sat, 19 Aug 2000, Dale Heatherington wrote:

> The real barrier to making the [realtime network] map is the lack of  
> lat/lon info of the aprsd igate in the status page. This could be added  
> but would require one or more new entires in the aprsd.conf file.

Why cannot it capture it from the Igates POSITs?  
Or couldnt each APRSd server simply beacon its own POSIT at the same 30  
minute interval as everyone else?

Bob

```
>
> On Sat, 19 Aug 2000, Steve Dimse K4HG wrote:
> > On 8/19/00 6:01 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:
> >
> > >As APRSd and APRServe represent the global APRS INTERNET network, and
> > >Igates come and go all the time, I am finding myself increasingly
> > >confused as to what the real "aprserve" network is.
> > >
> > >Each APRSd provides a WEB interface to see what other systems it is
> > >connected to, but wouldn't you have to be a worm to crawl through every
> > >possible connection to see what the big picture was at any instant?
> > >
> > The web status was added in 2.1.3 I believe, many IGates are running
> > older versions. In addition, when people upgrade they must manually edit
> > their config file to enable the feature, so many of those who are using
> > the latest version do not have this enabled.
> >
> > If you ever do succeed to produce such an image, it would be a horrible
> > mass of spaghetti, as many IGate are configured in strange and wonderful
> > ways!
> >
> > Steve K4HG
> >
> > ---
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> > To unsubscribe send a blank email to leave-aprsspec-11589P@lists.tapir.org
> > Questions regarding the SIG go to the SIG administrator: wallou@tapir.org
> >
> > Dale Heatherington
> > dale@wa4dsy.net
> > Web Page http://www.wa4dsy.net
> > Sent by KMail for Linux
> >
> >
> > ---
> > You are currently subscribed to aprsspec as: bruninga@nadn.navy.mil
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> > Questions regarding the SIG go to the SIG administrator: wallou@tapir.org
> >
> >
```

APRSDos REPLY/COMMENT:

```
Reply mail addr:   wb4apr@amsat.org
US mail address:   115 old Farm Ct, Glen Burnie, MD 21060
See DAYTON97 HISTORY: http://web.usna.navy.mil/~bruninga/dayton.html
See Maryland APRS LIVE: http://web.usna.navy.mil/~bruninga/aprs.html
See GPS on ANY radio: http://www.tapir.org/tapir/html/mic-e.html
```

---

```
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```

---

## 52. [aprsspec] Re: APRSd/APRServe NETWORK MAP

```
From: "Ev Tupis (W2EV)" <propnet@greeceny.com>
Date: Sun, 20 Aug 2000 08:39:42 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-103727-2000.08.20-07.50.34--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain
```

If the RF-to-Internet station included it's posit in the data stream every 30-minutes, and there was a "band-of-origination" byte in the spec that it could insert into each posit as it is gated, this would be a very useful system to plot the APRS' fluid topology.

Of course, this is simply the input from a user, who doesn't program APRS code, so the complexity of doing such a thing escapes me. But it would be a useful utility. :o)

Ev, W2EV

---

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---

### 53. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Sun, 20 Aug 2000 09:50:46 -0500 (CDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103742-2000.08.20-09.57.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103742-2000.08.20-09.57.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

> Date: Sun, 20 Aug 2000 08:39:42 -0400  
> From: "Ev Tupis (W2EV)" <[propnet@greeceny.com](mailto:propnet@greeceny.com)>  
> Subject: [aprsspec] Re: APRSd/APRServe NETWORK MAP  
> [...]  
> If the RF-to-Internet station included it's posit in the  
> data stream every 30-minutes, and there was a  
> "band-of-origination" byte in the spec that it could insert  
> into each posit as it is gated, this would be a very useful  
> system to plot the APRS' fluid topology.  
> [...]

If it is a once-every-30-minutes beacon, you may as well include the frequency, rather than just the band.

-tjs

---

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---

### 54. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 20 Aug 2000 10:54:14 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103745-2000.08.20-10.03.34--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103745-2000.08.20-10.03.34--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Sun, 20 Aug 2000, Ev Tupis (W2EV) wrote:

> If the RF-to-Internet station included it's posit in the  
> data stream every 30-minutes, and there was a  
> "band-of-origination" byte in the spec that it could insert  
> into each posit as it is gated, this would be a very useful  
> system to plot the APRS' fluid topology.

I think it is time to make the I-GATE ICON an OVERLAY ICON. This way, we can overlay "6", "2", "H" "S" to represent 6m, 2m, HF and Satellite IGates. I think this will be important in the years to come...

In fact, it is trivial to add this to APRSdos, only by adding a single byte in the list of ICON's that can be overlaid.

de WB4APR, Bob

---

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---

### 55. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: Steve Dimse K4HG <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Sun, 20 Aug 2000 11:08:43 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-103748-2000.08.20-10.15.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-103748-2000.08.20-10.15.44--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 8/20/00 10:54 AM Bob Bruninga ([bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)) wrote:

>I think it is time to make the I-GATE ICON an OVERLAY ICON. This way, we  
>can overlay "6", "2", "H" "S" to represent 6m, 2m, HF and Satellite  
>IGates. I think this will be important in the years to come...  
>  
>In fact, it is trivial to add this to APRSdos, only by adding a single  
>byte in the list of ICON's that can be overlaid.

>  
As I've said in the past, I still don't see the need to limit overlay to any set of icons. javAPRS has always supported overlay of any icon.

Steve K4HG

---  
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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 56. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Sun, 20 Aug 2000 13:20:20 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-103774-2000.08.20-12.27.52--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> >I think it is time to make the I-GATE ICON an OVERLAY ICON. This way, we  
> >can overlay "6", "2", "H" "S" to represent 6m, 2m, HF and Satellite  
> >IGates. I think this will be important in the years to come...

Steve Dimse wrote:

> As I've said in the past, I still don't see the need to limit overlay to  
> any set of icons. javAPRS has always supported overlay of any icon.

I agree. The Sprouls had a problem with it initially. Maybe that problem is no longer with us, now that they have been supporting Overlays for some time.

But in general, overlayable Icons need to have enough empty space in the center so that the overlay character looks nice, like it fits, instead of obscuring the central image of the ICON. I think that this is the main reason why we have not opened up Overlays to all characters, and tend to take it on a case-by-case basis...?

Bob

---  
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---

## 57. [aprsspec] APRSd/APRServe NETWORK MAP

From: "Darryl Smith" <[darryl@radio-active.net.au](mailto:darryl@radio-active.net.au)>  
Date: Tue, 22 Aug 2000 19:29:56 +1000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-104184-2000.08.22-04.25.26--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi...

I tried a few weeks ago to plot the interconnects between APRSd/APRServe... and ran into a problem... I do not have a tool that can graph 3D relationships, and the information I was getting was useless without this...

Darryl

-----  
Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia  
Mobile Number 0412 929 634 [+61 4 12 929 634 International]  
[Darryl@radio-active.net.au](mailto:Darryl@radio-active.net.au) | [www.radio-active.net.au](http://www.radio-active.net.au) for domain names

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---

## 58. [aprsspec] GATEing to RF

From: "Darryl Smith" <[darryl@radio-active.net.au](mailto:darryl@radio-active.net.au)>  
Date: Tue, 22 Aug 2000 19:42:18 +1000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <LYR11589-104185-2000.08.22-04.37.45--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

G'Day

This is a hard one, but I think it is more of SPEC that SIG. There now exists software that makes it very easy to gate particular classes of callsigns to RF... This is hard or impossible under APRSd and WinAPRS, as far as I can tell... But is very easy under UI-View.

What we are seeing in Australia is a few stations sending large amounts of data to RF from the internet... For instance ALL european RF stations, or all stations from a particular IGATE in the USA.

The way that software is working is that it transmits the data onto RF as soon as it gets it from the IGATE. The most horrible example of this was when one station connected to an IGATE on the port that had the 30 minute history, and kept transmitting continuously for minutes.

Given for ALOHA we should be utilising the frequency less than 20% should the spec state that no transmitter should transmit on a channel more than 20% over a 30 second window? [720 Bytes/30 seconds]

Now,

- o Is this reasonable?
- o Are other people seeing these sorts of problems?
- o If this were implemented, what should we do with packets over the Quota?
- o Should we delete them
- o or try to send them again once and then delete them?

Please do not mis-understand me... There are certainly good reasons to push data from the internet to RF, and UI-View does a lot of good things for APRS... Some clarification would be useful before too many people start doing too many horrible things to wreck APRS.

Darryl

-----  
Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia  
Mobile Number 0412 929 634 [+61 4 12 929 634 International]  
Darryl@radio-active.net.au | www.radio-active.net.au for domain names

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---

## 59. [aprsspec] Re: GATEing to RF

From: Roger Barker <roger@peaksys.co.uk>  
Date: Tue, 22 Aug 2000 13:34:32 +0100  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-104198-2000.08.22-07.42.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-104185-2000.08.22-04.37.45--roger#peaksys.co.uk@lists.tapr.org>, Darryl Smith <darryl@radio-active.net.au> writes  
>G'Day

>  
>This is a hard one, but I think it is more of SPEC that SIG. There now  
>exists software that makes it very easy to gate particular classes of  
>callsigns to RF... This is hard or impossible under APRSd and WinAPRS, as  
>far as I can tell... But is very easy under UI-View.

Not really, and it certainly can't be done accidentally. It requires the user to edit a file and input the information for the stations he wants to gate. (I thought WinAPRS also had that facility?)

>What we are seeing in Australia is a few stations sending large amounts of  
>data to RF from the internet... For instance ALL european RF stations, or  
>all stations from a particular IGATE in the USA.

Just as a point of fact, neither of those selections is possible in UI-View.

>The way that software is working is that it transmits the data onto RF as  
>soon as it gets it from the IGATE. The most horrible example of this was  
>when one station connected to an IGATE on the port that had the 30 minute  
>history, and kept transmitting continuously for minutes.

```
>
>      Given for ALOHA we should be utilising the frequency less than
>      20% should the spec state that no transmitter should transmit on
>      a channel more than 20% over a 30 second window? [720 Bytes/30 seconds]
>Now,
>      o Is this reasonable?
```

No, and have you told the few stations doing it that it isn't reasonable? If not, why not? If you've told them, what did they say?

--

Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

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---

## 60. [aprsspec] Re: GATEing to RF

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 22 Aug 2000 12:02:35 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-104239-2000.08.22-11.10.45--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Good idea. I like the idea of self-enforcement of the 20% aloha rule in general as a default. The user can override it on a case basis, but after say one hour, the default kicks back in. Or something like that...

bob

On Tue, 22 Aug 2000, Darryl Smith wrote:

```
> This is a hard one, but I think it is more of SPEC than SIG. There now
> exists software that makes it very easy to gate particular classes of
> callsigns to RF... This is hard or impossible under APRSd and WinAPRS, as
> far as I can tell... But is very easy under UI-View.
>
> What we are seeing in Australia is a few stations sending large amounts of
> data to RF from the internet... For instance ALL european RF stations, or
> all stations from a particular IGATE in the USA.
>
> The way that software is working is that it transmits the data onto RF as
> soon as it gets it from the IGATE. The most horrible example of this was
> when one station connected to an IGATE on the port that had the 30 minute
> history, and kept transmitting continuously for minutes.
>
>      Given for ALOHA we should be utilising the frequency less than
>      20% should the spec state that no transmitter should transmit on
>      a channel more than 20% over a 30 second window? [720 Bytes/30 seconds]
>
> Now,
>      o Is this reasonable?
>      o Are other people seeing these sorts of problems?
>      o If this were implemented, what should we do with packets over the Quota?
>      o Should we delete them
>      o or try to send them again once and then delete them?
>
> Please do not mis-understand me... There are certainly good reasons to push
> data from the internet to RF, and UI-View does a lot of good things for
> APRS... Some clarification would be useful before too many people start
> doing too many horrible things to wreck APRS.
>
> Darryl
>
> -----
> Darryl Smith, VK2TDS    POBox 169 Ingleburn NSW 2565 Australia
> Mobile Number 0412 929 634 [+61 4 12 929 634 International]
> Darryl@radio-active.net.au | www.radio-active.net.au for domain names
>
>
>
> ---
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>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

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## 61. [aprsspec] Re: GATEing to RF

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Tue, 22 Aug 2000 12:38:35 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-104249-2000.08.22-11.47.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 22 Aug 2000, Roger Barker wrote:

> > Given for ALOHA we should be utilising the frequency less than  
> > 20% should the spec state that no transmitter should transmit on  
> > a channel more than 20% over a 30 second window? [720 Bytes/30 seconds]  
> > Now, Is this reasonable?  
>  
> No, and have you told the few stations doing it that it isn't  
> reasonable? If not, why not? If you've told them, what did they say?

Actually, come to think about it, CHANNEL SHARING at less than 10% is totally enforced and built into APRSdos. Always has been. Even for manually transmitted packets, the software will not let you transmit ANY packet any more often than one every 10 seconds. I guess I assumed that this fail-safe protection being built-in was so fundamental to our UI network, that I never thought to suggest to other authors to make sure they also had some kinds of built-in loading protection.

The more I think about it, the more I would hope that all authors include some kinds of default limits on channel loading. I am not saying that you cannot let the user override these defaults. Of course, there are exceptions and so forth, but in general, it seems reasonable to me that we all must protect the channel from unintended consequences of improper settings by having this final LOADING timer on each stations contribution to the network...

Just a thought. I am not pointing any fingers at all. I do not know what the other authors do, but 10% loading restrictions have always been fundamental to APRSdos to protect the network...

Any other use of the channel should not be on 144.39 but should be on a dedicated frequency...

Bob

---

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---

## 62. [aprsspec] Re: GATEing to RF

From: Dale Heatherington <dale@wa4dsy.net>  
Date: Tue, 22 Aug 2000 13:06:38 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-104255-2000.08.22-12.24.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Below are the aprsd.conf statements that control Internet to RF packet gating. Note TncPktSpacing which controls the rate packets



are allowed to be transmitted on RF. These packets come from a 64 packet fifo queue. Packets overflowing the queue are discarded. The discarded packets are counted in "TncQ Overflows" viewable on the aprsd html status page.

```
# Allow Internet to RF message passing.
rf-allow yes
#

#Set the minimum time between TNC transmit packets in milliseconds
TncPktSpacing 1500
#

#
#Selected call signs which are always gated to RF
#if they are not seen locally. All packets from
#these are gated in real time. Do not use unless
#you really need real time data. Consider posit2rf below.
#They are case sensitive! Use upper case. Up to 64 may be defined.
#
gate2rf K4HG-8 N4NEQ-9
gate2rf W7LUS-14
#
#Call signs of stations whose posits are gated
#to RF every 15 minutes. Only posit packets are
#gated. Posits are taken from the history list.
#They are case sensitive! Use upper case.
posit2rf K4HG-8 N4NEQ-9
posit2rf W7LUS-14
#
#Define a list of message destination call signs or aliases
#to gate to RF full time. Note: the CQGA example
#below is CQ GA (Georgia). Edit to suite your locale.
#Up to 64 of these may be defined. They are case sensitive.
#
msgdest2rf SCOUTS KIDS CQGA
#
#end
```

On Tue, 22 Aug 2000, Darryl Smith wrote:

```
> G'Day
>
> This is a hard one, but I think it is more of SPEC that SIG. There now
> exists software that makes it very easy to gate particular classes of
> callsigns to RF... This is hard or impossible under APRSd and WinAPRS, as
> far as I can tell... But is very easy under UI-View.
>
> What we are seeing in Australia is a few stations sending large amounts of
> data to RF from the internet... For instance ALL european RF stations, or
> all stations from a particular IGATE in the USA.
>
> The way that software is working is that it transmits the data onto RF as
> soon as it gets it from the IGATE. The most horrible example of this was
> when one station connected to an IGATE on the port that had the 30 minute
> history, and kept transmitting continuously for minutes.
>
> Given for ALOHA we should be utilising the frequency less than
> 20% should the spec state that no transmitter should transmit on
> a channel more than 20% over a 30 second window? [720 Bytes/30 seconds]
>
> Now,
>   o Is this reasonable?
>   o Are other people seeing these sorts of problems?
>   o If this were implemented, what should we do with packets over the Quota?
>   o Should we delete them
>   o or try to send them again once and then delete them?
>
> Please do not mis-understand me... There are certainly good reasons to push
> data from the internet to RF, and UI-View does a lot of good things for
> APRS... Some clarification would be useful before too many people start
> doing too many horrible things to wreck APRS.
>
> Darryl
>
> -----
```

```

> Darryl Smith, VK2TDS POBox 169 Ingleburn NSW 2565 Australia
> Mobile Number 0412 929 634 [+61 4 12 929 634 International]
> Darryl@radio-active.net.au | www.radio-active.net.au for domain names
>
>
>
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--
Dale Heatherington
dale@wa4dsy.net
Web Page http://www.wa4dsy.net
Sent by KMail for Linux

---
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```

### 63. [aprsspec] Re: GATEing to RF

```

From: Steve Dimse <sdimse@earthlink.net>
Date: Tue, 22 Aug 2000 13:29:57 -0400
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-104258-2000.08.22-12.36.57--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

On 8/22/00 12:02 PM Bob Bruninga (bruninga@nadn.navy.mil) wrote:

>Good idea. I like the idea of self-enforcement of the 20% aloha rule in
>general as a default. The user can override it on a case basis, but after
>say one hour, the default kicks back in. Or something like that...
>
APRServe has always had hardcoded limits far, far below this limit, with
one message packet per station every minute, and one position report
every 10 minutes.

Steve K4HG

---
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Questions regarding the SIG go to the SIG administrator: wallou@tapir.org

```

### 64. [aprsspec] Re: GATEing to RF

```

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Tue, 22 Aug 2000 15:26:13 -0400 (EDT)
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>
Cc: APRS Spec Discussion List <aprsspec@lists.tapir.org>
Message-ID: <LYR11589-104280-2000.08.22-14.32.49--lyris.aprsspec#tapir.org@lists.tapir.org>
Rendered body type: text/plain

On Tue, 22 Aug 2000, Dale Heatherington wrote:

> ... note TncPktSpacing (milliseconds) which controls the rate packets
> are allowed to be transmitted on RF....
>
> TncPktSpacing 1500

Hummh... I can think of some ideas.

1) In the case of multiple packets, then this does not allow multiple
packets to be all bundled together into a single multi-frame packet burst?
Thus we lose the advantage of TXD delay amortization? Actually, it
probably does, since multiple packets if they queue up due to a busy
channel, then they will all be bundled by the TNC anyway when the channel
clears.

2) If 1.5 seconds above is applied to every packet, then we do get the
inefficiencies of multiple TXD delays and you also get lots of problems
with collisions when the first packet is still being digipeated when the
next one comes out. In this case, it is still better to bundle up say 3
to 5 packets at a time before transmitting any of them?

So would it be better to force the IGate-to-RF to BUNDLE packets and then
limit the timing of these bundles? Something like this:

```

- \* Hold each packet for 3 seconds.
- \* Combine each new packet with the pending queue
- \* When a total of 5 packets are accumulated OR more than 3 seconds has gone by without any more packets, and when the courtesy count down timer is zero, then transmit them all at once.
- \* reset courtesy count-down timer to N seconds.

If the Igate is to be an equal user of the channel, then set N to about 18 seconds. If the Igate is to get priority, then set it to about 8 or less..

---

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---

## 65. [aprsspec] Re: GATEing to RF

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
 Date: Tue, 22 Aug 2000 15:42:45 -0400 (EDT)  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Message-ID: <[LYR11589-104285-2000.08.22-14.49.18--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-104285-2000.08.22-14.49.18--lyris.aprsspec#tapr.org@lists.tapr.org)>  
 Rendered body type: text/plain

On Tue, 22 Aug 2000, Steve Dimse wrote:

> APRServe has always had hardcoded limits far, far below this limit, with  
 > one message packet per station every minute, and one position report  
 > every 10 minutes.

Thats good. I like that. But, with over 2000 people on the APRServe stream, and say more than 10 of them decide to communicate with someone in dayton, then that totals to about 11 packets per minute or about the ALOHA limit for the Dayton IGate.

Thus, the limit seems to be a reasonable one, although it could saturate in such a worst case scenario...

Bob

---

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---

## 66. [aprsspec] Re: GATEing to RF

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
 Date: Tue, 22 Aug 2000 14:57:18 -0500 (CDT)  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
 Message-ID: <[LYR11589-104291-2000.08.22-15.04.52--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-104291-2000.08.22-15.04.52--lyris.aprsspec#tapr.org@lists.tapr.org)>  
 Rendered body type: text/plain

> Date: Tue, 22 Aug 2000 15:42:45 -0400 (EDT)  
 > From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
 > Subject: [aprsspec] Re: GATEing to RF  
 > [...]  
 > Thats good. I like that. But, with over 2000 people on the APRServe  
 > stream, and say more than 10 of them decide to communicate with someone in  
 > dayton, then that totals to about 11 packets per minute or about the ALOHA  
 > limit for the Dayton IGate.

Is the Dayton IGate deaf, or if the comparison with ALOHA a bit stretched?

-tjs

---

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---

## 67. [aprsspec] Re: GATEing to RF

From: Steve Dimse <[sdimse@earthlink.net](mailto:sdimse@earthlink.net)>  
 Date: Tue, 22 Aug 2000 16:03:13 -0400  
 To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <LYR11589-104295-2000.08.22-15.10.39--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 8/22/00 3:57 PM Tim Salo (salo@networkcs.com) wrote:

>> Thats good. I like that. But, with over 2000 people on the APRServe  
>> stream, and say more than 10 of them decide to communicate with someone in  
>> dayton, then that totals to about 11 packets per minute or about the ALOHA  
>> limit for the Dayton IGate.

>

>Is the Dayton IGate deaf, or if the comparison with ALOHA a bit  
>stretched?

>

Actually, the Dayton IGate is one way, which is probably a good thing ;-)

Steve K4HG

---

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---

## 68. [aprsspec] Re: GATEing to RF

From: Tim Salo <salo@networkcs.com>  
Date: Tue, 22 Aug 2000 15:13:45 -0500 (CDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-104301-2000.08.22-15.20.27--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Subject: Re: [aprsspec] Re: GATEing to RF

> Date: Tue, 22 Aug 2000 16:03:13 -0400

> From: Steve Dimse <sdimse@earthlink.net>

>

> On 8/22/00 3:57 PM Tim Salo (salo@networkcs.com) wrote:

> >> Thats good. I like that. But, with over 2000 people on the APRServe

> >> stream, and say more than 10 of them decide to communicate with someone in

> >> dayton, then that totals to about 11 packets per minute or about the ALOHA

> >> limit for the Dayton IGate.

> >

> >Is the Dayton IGate deaf, or if the comparison with ALOHA a bit

> >stretched?

>

> Actually, the Dayton IGate is one way, which is probably a good thing ;-)

Sorry I wasn't more clear.

Does the Dayton IGate operate in CSMA mode, namely does it listen  
before transmitting in order to reduce collisions?

-tjs

---

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---

## 69. [aprsspec] Re: GATEing to RF

From: John Ackermann <jra@febo.com>  
Date: Tue, 22 Aug 2000 19:44:45 -0300  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-104346-2000.08.22-18.51.33--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> On 8/22/00 3:57 PM Tim Salo (salo@networkcs.com) wrote:

>

> >> Thats good. I like that. But, with over 2000 people on the APRServe

> >> stream, and say more than 10 of them decide to communicate with someone in

> >> dayton, then that totals to about 11 packets per minute or about the ALOHA

> >> limit for the Dayton IGate.

> >

> >Is the Dayton IGate deaf, or if the comparison with ALOHA a bit

> >stretched?

> >

> Actually, the Dayton IGate is one way, which is probably a good thing ;-)

>

> Steve K4HG

For now... we'll be converting over to aprsd as soon as I work out some

details.

John N8UR  
jra@febo.com

--

John Ackermann N8UR  
Dayton, Ohio, USA  
jra@febo.com -- <http://www.febo.com>

-----BEGIN PGP PUBLIC KEY BLOCK-----  
Version: 2.6.3a

mQBtAzgI9hgAAEDAMiMQDZTVVuVIS0AscJ0Wy63oK4+Q5xvtxbX/ZoG1qCOuYDI  
Fph4/RqL9vVEItWBy6ISk+zbkATzPgy84nrI7+GBtld4F9DoHWARQXjC1I8cFZjY  
TSe16ffq0/ba1ukLnQAFebQlSm9obiBSLiBBY2tlcm1hbm4gTjhVUiA8anJhQGZl  
Ym8uY29tPokAdQMFEgI9hjQ0/ba1ukLnQEBtYIC/AxJ2RqT0/9TqY8JGEkPx2sw  
+W5Z6Tu4UI654t9diGdCcIEPjOG1qUvwH2Xop0Yj9QGoM4NnHiw6qUSN5VH7hHKA  
bGnpuTxinuW/gKaI3bt2MC8QZZq0gy2de26907lE2A==  
=UHWL  
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---

## 70. [aprsspec] Version 1?

From: "Cap Pennell" <[cap@cruzio.com](mailto:cap@cruzio.com)>  
Date: Wed, 23 Aug 2000 10:33:05 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-104562-2000.08.23-12.40.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Maybe in time for DCC? That would be nice. I think it's important to get  
an actual, official Version 1 accomplished as the working group intended.  
Some of the stuff recently being discussed here could come later.  
73, Cap

Cap Pennell KE6AFE  
Santa Cruz, CA 95062-1002  
3658.93N/12200.91W CM86xx  
<http://members.cruzio.com/~cap>

---

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---

## 71. [aprsspec] Re: APRSd/APRServe NETWORK MAP

From: "Rob Wittner" <[rmw@rwa-inc.com](mailto:rmw@rwa-inc.com)>  
Date: Thu, 24 Aug 2000 09:42:05 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-104786-2000.08.24-08.49.42--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> As I've said in the past, I still don't see the need to limit overlay to  
> any set of icons. javaAPRS has always supported overlay of any icon.  
>  
> Steve K4HG

So has APRS/CE, for the record...

-Rob  
KZ5RW

---

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---

## 72. [aprsspec] APRS weather questions

From: James Jefferson <jjeffers@deskmedia.com>  
Date: Sun, 27 Aug 2000 10:58:54 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-105391-2000.08.27-11.06.24--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello everyone,

I have written a command line utility that takes arguments and formats them into a APRS WX packet.

I have some questions about copyrights, luminosity, snowfall, and raw rain count.

1) How do I say that my program sends APRS packets? Can I say it sends APRS(tm) compatible packets? I'm not willing to pay any licensing fees. The program is going to be released into the public domain.

2) The aprs spec (version 101m) isn't very clear about how luminosity is included in the packet. The spec says:  
Other parameters that are available on some weather station units include:  
"L = luminosity (in watts per square meter) 999 and below.  
l l (lower-case letter "L") = luminosity (in watts per square meter) 1000 and above.  
(L is inserted in place of one of the rain values).  
s = snowfall (in inches) in the last 24 hours.  
# = raw rain counter"

What does it mean by replacing one of the rain values? Can someone show me an example packet? One with luminosity less then 1000 and a packet where luminosity is over 1000.

3) How many characters long is the snowfall data? s1? s12? s123? s1234?  
4) How many characters long is the raw rain counter data? #1? #12? #123? #1234?

Hopefully my questions are not too confusing. I would not be surprised if they are, because I'm terribly confused with the APRS spec.

-James Jefferson KB0THN

---

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---

### 73. [aprsspec] ANNOUNCEMENT: ARRL/TAPR 19th Annual DCC Sep. 22-24

From: Stan Horzepa <stanzepa@mail2.nai.net>  
Date: Mon, 28 Aug 2000 22:12:58 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-105758-2000.08.28-21.21.43--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Notice:

September 1, 2000 is the last day to receive the special hotel room rate of \$89/night single or double and the pre-registration price for the conference.

ARRL and TAPR 19th Annual  
Digital Communications Conference  
September 22-24, 2000 - Orlando, Florida

For more information see: <http://www.tapr.org/dcc>

Information

Mark your calendar and start making plans to attend the year's premier event in digital communications. The 19th Annual ARRL and TAPR Digital Communications Conference will be held September 22-24, 2000, in Orlando, Florida - just minutes from the Orlando International Airport.

The ARRL and TAPR Digital Communications Conference is an international forum for radio amateurs in digital communications, networking, and related technologies to meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. The Digital Communications Conference is not just for the digital expert, but also for digitally oriented amateurs of all levels of experience.

A Conference for the Beginner as well

The conference is not just for the digital expert. As in years past an entire session strand with beginning, intermediate, and advanced presentations on selected topics in digital communications will be offered. Some of the topics will include: APRS, Satellite Communications, TCP/IP, Digital Radio, Spread Spectrum and other introductory topics. Come to the conference and hear these topics presented by the experts!

#### Area Attractions

The Orlando Florida area is famous for its attractions and vacation spots. Disney World, Universal Studios, and Sea World (just to name a few) are within 15 minutes of the hotel. Shuttle service from the hotel will be available for a small fee. Cape Canaveral and Cocoa Beach are a 30 minute drive East of the hotel.

#### Symposia, Seminars and Banquet

Two symposia/seminars will be held which allow those with additional time and interest to make the most of the Conference. For those who may have interest in just one symposium or seminar, registration for the conference is not required to attend these activities. This allows maximum flexibility for those who may want to participate during the Digital Communications Conference, but do not have an entire weekend to devote to the event.

The Fourth APRS National Symposium will be held on Friday and will be moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely include many APRS software authors, such as Bob Bruninga, WB4APR (the father of APRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), Mike Musick, N0QBF (developer of PocketAPRS), and other nationally known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

On Saturday night the DCC Banquet will be held. A guest speaker will speak after the banquet and a prize drawing will top the evening. The Grand Prize is a Palm VII Personal Digital Assistant and Synergy Systems LLC has donated two M12 development kits and many more.

The Sunday morning seminar will be focused on PIC development, design, and programming. This five-and-a-half hour seminar will focus on the things you need to know now in order to understand and begin to participate in PIC development.

#### Co-Hosts

The 2000 ARRL and TAPR Digital Communications Conference local co-hosts will be:

Lake Monroe Amateur Radio Society

(<http://www.qsl.net/lmars/>),

Orange County ARES/RACES

(<http://evcom.net/~jvoisin/ares.htm>),

Seminole County ARES/RACES

(<http://www.geocities.com/capecanaveral/launchpad/4773>),

and Orlando Amateur Radio Club

(<http://www.oarc.org/>).

International Co-Hosts PRUG (Packet Radio User Group of Japan) will be the International co-host for a third year running. PRUG will be hosting an informal social Friday evening before their seminar and symposium is held. Visit <http://www.prug.or.jp> for more information about PRUG.

#### Hotel

Conference presentations, meetings, and seminars will be held at the Orlando Airport Marriott. It is highly recommended that you book your room prior to arriving. A special DCC room rate of \$89/single and \$89/double per night has been blocked for 50 rooms and is available until September 1st, 2000. Once the 50 rooms have been reserved, room rates will increase. So be sure to book your rooms early! The hotel provides transportation to and from the Orlando International Airport. Please contact the hotel to arrange specific transportation needs.

Orlando Airport Marriott (conference hotel)

7499 Augusta Drive

Orlando, FL 32822

Phone 407-851-9000, Fax 407-857-6211

(<http://marriott-hotels.com/MCOAP/>)

What you can expect at DCC 2000

- A full day of papers and breakouts for the beginner to the advanced
- Two seminars/symposiums
- The fifth annual Student Paper session.
- A banquet with Special Guest Speaker.
- Informal get-togethers throughout the weekend.
- TAPR Membership Meeting
- An event at which the most important new developments in amateur digital communications are announced.
- Digital 'movers and shakers' from all over the world in attendance.

There are few activities where your participation can be so much fun and important! What a great way to share and renew your enthusiasm for digital amateur radio! A get-together with colleagues and bringing each other up to date on your latest work -- all this, and more, for an unforgettable weekend of amateur radio and digital communications. We hope to see you at the ARRL and TAPR Digital Communications Conference on September 22-24, 2000!

Full information on the conference and hotel information can be obtained by contacting:

Tucson Amateur Packet Radio  
 Phone: (940) 383-0000.  
 Fax: (940) 566-2544  
 Email: [tapr@tapr.org](mailto:tapr@tapr.org)  
 Web: <http://www.tapr.org>

#### Registration Form

Contact the TAPR office by Phone 940-383-0000, Fax 940-566-2544, or Internet: <http://www.tapr.org> and [tapr@tapr.org](mailto:tapr@tapr.org) to register or for additional information.

Conference Registration includes: Conference Proceedings, Sessions, Meetings, and Lunch on Saturday.

- Pre-Registration (before Sept 1st)

\$45.00 \_\_\_\_\_

- Registration (after Sept 1) or at door

\$55.00 \_\_\_\_\_

- Saturday Evening Dinner (Limited Space)  
 Dinner with Guest Speaker  
 Prize Drawing

\$30.00 \_\_\_\_\_

#### Symposia/Seminars

- 4th Annual APRS National Symposium  
 Friday, 1pm - 7pm. \$25.00 \_\_\_\_\_

- Sunday Seminar  
 PIC Design, Development, and Programming

Sunday, 8:30 am - 2 pm. \$20.00 \_\_\_\_\_

TOTAL \_\_\_\_\_

Name/Call:

Street Address:

City/State/Zip:

Country:

Phone Number:

Email:

Charge my credit card (circle one):

VISA          MasterCard

Acct:



Expiration Date:

Signature on card:

Mail completed registration form with check to:  
TAPR  
8987-309 E Tanque Verde Rd #3378  
Tucson, AZ 85749-9399

Or check <http://www.tapr.org/dcc> for an on-line registration form.

A registration packet will be mailed in September upon receipt of registration form and payment.

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

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## 74. [aprsspec] APRS Protocol Specification Version 1.0

From: John Ackermann <[jra@febo.com](mailto:jra@febo.com)>  
Date: Thu, 31 Aug 2000 10:56:39 -0300  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-106720-2000.08.31-10.04.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I'm happy (you don't know *\*how\** happy) to announce that APRS Protocol Specification Version 1.0 was approved by the APRS Working Group on August 29, 2000 and has been made available for download at the Working Group web page, <http://www.tapr.org/tapr/html/Faprswg.html>.

This Version 1.0 (technically, due to change control, version 1.0.1) document is nearly 130 pages long and does a tremendous job documenting the APRS protocol as used on the air in the summer of 2000. We should all thank the Working Group members, and especially Ian Wade, G3NRW, the Technical Editor who actually wrote the thing, for their hard work. Although the process took far longer than anyone anticipated when we started, I think the end result is definitely worth the wait.

Where do we go from here? Although this is an excellent document, it almost certainly still contains errors, omissions, and ambiguities. In addition, it reflects only the current protocol, and not any of the areas in which the protocol might be extended. The WG members will be meeting at the DCC in Orlando next month and electronically thereafter to put in place a mechanism to deal with requested corrections and enhancements. The WG Charter outlines a way to handle this, but experience has shown that some modifications may be necessary for a workable process.

Also at the DCC and thereafter, the WG will consider adding new members. Since its founding, several new authors have come on the scene, and two of the original members have resigned. Any author of software or firmware implementing the APRS protocol who wishes to join the WG should contact me ([jra@febo.com](mailto:jra@febo.com) or [n8ur@tapr.org](mailto:n8ur@tapr.org)) directly. Please -- we need to hear directly from those interested in joining, so rather than writing to ask that someone be considered, encourage that person to get in touch with me. Also, please remember that the WG is not affiliated with TAPR. Membership decisions will be made by the group, and I can't tell you now how many (if any) new members will be added.

73,  
John Ackermann N8UR  
Administrative Chair, APRS Working Group  
[jra@febo.com](mailto:jra@febo.com)

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 75. [aprsspec] How does change occur?

From: "Stephen M. King" <frastephen@home.com>  
Date: Thu, 31 Aug 2000 22:26:22 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-106836-2000.08.31-21.33.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

First, congratulations to the WG for completing the approval of the Protocol Spec! I am sure you all worked very hard to document this wonderful system/service!

The recent Internet Routing debate inspired me to read the WG charter and to begin wading through the Spec in order to learn more about APRS. I have learned a lot from both the discussion and the reading.

It seems that implementing NOGATE (or whatever is used) is a protocol question.

My first question would be is that correct? Is implementing NOGATE (or whatever) a change to the protocol? If it is not then why?

Again, I ask, not to stir the pot (which is why I am asking here), but for my own education and understanding. If it is a protocol question, then the charter seems to outline a process for implementation. I am a bit confused since it sounds like NOGATE is being implemented already.

Thanks in advance for helping me to learn more about this great system!

Peace and 73,  
Stephen  
KD3OG

---

# September 2000

Original source file: aprsspec.0009

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssid/aprsspec/mail\\_archive/aprsspec.0009](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprsspec/mail_archive/aprsspec.0009)

## 1. [aprsspec] Tropical Cyclone Pressure

From: "Dale Huguley" <kg5qd@earthlink.net>  
Date: Sat, 2 Sep 2000 21:46:53 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-107152-2000.09.02-16.59.03--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All-

Nice Job on the Spec!

In Chapter 12, page 67-- the minimum central pressure is defined as 4 digits. The present on-the-air protocol is 3 digits. If we are changing to this-- can a time table be set?

Now that Version 1 is out - is there a mechanism for adding to the protocol? I have 17 months of suggestions built up.

73 de kg5qd Dale

---

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

---

## 2. [aprsspec] Re: Tropical Cyclone Pressure

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Sun, 3 Sep 2000 09:38:48 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-107258-2000.09.03-08.45.56--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sat, 2 Sep 2000, Dale Huguley wrote:

> In Chapter 12, page 67-- the minimum central pressure is defined as 4  
> digits. The present on-the-air protocol is 3 digits. If we are changing to  
> this-- can a time table be set?

We basically got little input from any of the authors either way. So my guess is that you know more about what all the authors do with this field and it is best to discuss it with any author that might be doing it differently.

> Now that Version 1 is out - is there a mechanism for adding to the protocol?  
> I have 17 months of suggestions built up.

Yes, submit it to the WG. The process is painful, but I hope we will make progress...

Bob

---

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---

## 3. [aprsspec] RE: APRS Protocol Specification Version 1.0

From: "Cap Pennell" <cap@cruzio.com>  
Date: Mon, 4 Sep 2000 11:51:27 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-107529-2000.09.04-13.58.37--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> -----Original Message-----

> From: John Ackermann N8UR

> Sent: Thursday, August 31, 2000 6:57 AM

> Subject: [aprsspec] APRS Protocol Specification Version 1.0

>

> I'm happy (you don't know \*how\* happy) to announce that APRS Protocol  
> Specification Version 1.0 was approved by the APRS Working Group on

> August 29, 2000 and has been made available for download at the Working  
> Group web page, <http://www.tapr.org/tapr/html/Faprswg.html>.  
<snip>

Great work, men! It's rewarding to see a "group" actually get things DONE!  
Congratulations on a fine document. You should all be very proud of your  
accomplishment. I know it wasn't easy. Thank you for your effort and  
perseverance.

Now, on to version 2. hi hi  
73, Cap KE6AFE

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#### 4. [aprsspec] Validation Suite

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 4 Sep 2000 22:56:16 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-107658-2000.09.05-01.03.33--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-107658-2000.09.05-01.03.33--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello, Folks.

Great Work on the Specification. Its been a long time coming, and badly  
needed. Sure, its not perfect, but I have never yet seen a cooperatively  
produced spec that is. Well, come to think of it, I've never seen a  
unilaterally produced "perfect spec" either!

I need to generate a suite of validation packets for testing the code I am  
writing. I have in mind something along the line of Ian's "Mic-E Test  
Suite" he distributed on Aug 2, 2000.

If I am going to do that work, it might as well be done in a form that is  
usable by others. So, the question of format comes up.

(a) Can everyone handle text with only carriage-return line delimiters, or  
does it have to be CR+LF? What about Unix line delimiters?

(b) My code will reject "packets" from file-read input that begin with  
anything other than a number or upper-case A-Z (ie, first character of a  
call-sign). Its easy to start lines with something else, say "/" (as a  
random choice) as a comment, describing what the packet is testing. Does  
anyone else's code have this or similar capability? If not, how should  
packets be tagged so as simplify cross-reference between the packets and  
the description? Another option would be to produce two files, one  
containing only the test packets and the other with the same test packets  
plus comments. It would then be up to the tester to correlate the text with  
comments to the action of the code.

(c) Are there naming requirments to allow the text file to function as a  
source of "packets"? Of course, a text file can always be renamed.

(d) Are there any other requirments I should be aware of?

I plan to use sample packets directly from the spec for validation of  
acceptance and interpretation.

I also plan to include packets with a variety of errors and problems to  
test handling of fault cases. But, there will be no cases which violate the  
constraints of AX.25 packets. That means, for example,

(1) NO packets with excessively long call signs (ie, W7ABCDEF), either as  
source address or as via-calls.

(2) NO packets with SSID's outside of the range 0-15 (ie, KA7EHK-99),  
either as source address or as via-calls.

(3) NO packets with excessively long destination address (ie, APW345678)

(4) NO packets which exceed the AX.25 character-length limits

If anyone has suggestions for common fault-types (especially as seen on the  
air), they are encouraged to write me. Rather than clogging the list,  
unless your comment really needs to be seen by other list readers, please  
send your comments directly to me.

Cheers, everyone,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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---

## 5. [aprsspec] Re: Validation Suite

From: Ian Wade <[ian.wade@netro.co.uk](mailto:ian.wade@netro.co.uk)>  
Date: Tue, 5 Sep 2000 07:33:35 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-107669-2000.09.05-02.12.42--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

-----BEGIN PGP SIGNED MESSAGE-----  
Hash: SHA1

In article <LYR19680-107658-2000.09.05-01.03.33--Ian.Wade#netro.co.uk@lists.tapr.org>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes

>  
>I need to generate a suite of validation packets for testing the code I am  
>writing. I have in mind something along the line of Ian's "Mic-E Test  
>Suite" he distributed on Aug 2, 2000.

[snip]

>  
>If anyone has suggestions for common fault-types (especially as seen on the  
>air), they are encouraged to write me. Rather than clogging the list,  
>unless your comment really needs to be seen by other list readers, please  
>send your comments directly to me.  
>

Hi Jim. Take a look at my <APRSdec> program (<http://www.tapr.org/~g3nrw>).  
You'll find many error traps in there.

73  
Ian, G3NRW  
Technical Editor, APRS Protocol Specification

- - -  
+-----+  
| APRS on 144.800 [I0915X]                   ~55km/35 miles NNW of London |  
|                                           email: [g3nrw@tapr.org](mailto:g3nrw@tapr.org)                   |  
|                                           |                                           |  
|       APRS PROTOCOL SPEC: <http://www.tapr.org/tapr/html/Faprswg.html> |  
| <APRSdec> APRS DECODER: <http://www.tapr.org/~g3nrw>                   |  
|   Mic-Encoder Software: <http://www.tapr.org/~g3nrw>                   |  
+-----+

-----BEGIN PGP SIGNATURE-----  
Version: PGPsdk version 1.7.1

iQA/AwUB0bStvwnqw0tnuPgqEQJz+ACdH32cx2wJNrqcqBt2884P8PPlCsQAoPbU  
ME+2CVl7Ik9xiH/ShYVC50xv  
=faTO

-----END PGP SIGNATURE-----

---

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---

## 6. [aprsspec] ADMIN: Monthly Announcement

From: "Horzepa, Stan" <Stan\_Horzepa@adc.com>  
Date: Wed, 6 Sep 2000 08:44:49 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-107904-2000.09.06-09.01.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

(This message is posted on the APRS SPEC SIG on a monthly basis.)

#### PURPOSE

The purpose of the APRS SPEC SIG is to provide a forum for folks interested in discussing the APRS protocol specification.

#### POSTING MESSAGES

To post messages to the APRS SPEC SIG, send email to [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)

#### APRS SPEC SIG RULES

The APRS SPEC SIG has a few simple rules:

- . Be courteous. Abusive, insulting, or rude behavior demonstrated towards another list member is a violation of this rule.
- . Stick to the subject, i.e., the APRS protocol specification. Subjects that are only tangentially related to the APRS protocol specification (like "what kind of printer should I buy to print out my copy of the APRS specification?") may be considered off-topic. If you start a message with "this is off-topic..." then you are violating this rule.
- . Be succinct when composing a message. (The APRS SPEC SIG software has been optioned to limit the length of each message.)
- . When quoting a previous message, only quote the parts of that message you are referencing. (The APRS SPEC SIG software has been optioned to limit the length of a quote.)
- . Do not send messages in HTML format.
- . Do not send attachments.
- . Cross-posting is not permitted. (The APRS SPEC SIG software has been optioned to prevent cross-posting.)
- . The APRS SPEC SIG administrator reserves the right to suspend or ban any list member who violates these rules.

#### UNSUBSCRIBING

To unsubscribe from the APRS SPEC SIG, follow the directions you will find at the bottom of each message you receive from the APRS SPEC.

#### QUESTIONS, COMMENTS, ETC.

If you have any questions, comments, etc. concerning the APRS SPEC, please email the APRS SPEC SIG administrator at the address below.

Stan Horzepa, WA1LOU, [wallou@tapr.org](mailto:wallou@tapr.org)

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## 7. [aprsspec] Re: Validation Suite

From: David VanHorn <dvanhorn@cedar.net>  
Date: Sun, 10 Sep 2000 12:19:02 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-108543-2000.09.10-12.30.56--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

- >
- >(1) NO packets with excessively long call signs (ie, W7ABCDEF), either as
- >source address or as via-calls.
- >
- >(2) NO packets with SSID's outside of the range 0-15 (ie, KA7EHK-99),

```
>either as source address or as via-calls.
>
>(3) NO packets with excessively long destination address (ie, APW345678)
>
>(4) NO packets which exceed the AX.25 character-length limits
```

It would probably be useful though, to create a file containing such errors as a separate item.  
( I am volunteering to help)

Point being, there are devices like HSPs out there, that give you the ability to get data in your serial port that could never be transmitted over the air.

Testing compliance with a spec is one issue, but as we've seen with WAPRS, bad data must not cause failures.

This might be simpler to implement with a program though.  
Define error routines, then activate each either randomly, or just walk the tree choosing all possible error combinations. I did this once in the credit terminal world, to fish out a bug that only affected some of our terminals, very infrequently. With a randomized error spectrum, it was 5 in 7000. Once I found that, I was able to repeat it every time, because I knew the mechanism from the program logs.

Testing for crash could even be automated, since you could stimulate a response from the target software to see if it's still alive (?APRS? or similar)

--

Where's dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

---

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## 8. [aprsspec] Re: Validation Suite

From: Tim Salo <[salo@networkcs.com](mailto:salo@networkcs.com)>  
Date: Mon, 11 Sep 2000 16:44:26 -0500 (CDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-108789-2000.09.11-16.51.54--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-108789-2000.09.11-16.51.54--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

```
> Date: Mon, 4 Sep 2000 22:56:16 -0700
> From: Jim Wagner <wagnerj@proaxis.com>
> Subject: [aprsspec] Validation Suite
> [...]
> I need to generate a suite of validation packets for testing the code I am
> writing. I have in mind something along the line of Ian's "Mic-E Test
> Suite" he distributed on Aug 2, 2000.
> [...]
> (b) My code will reject "packets" from file-read input that begin with
> anything other than a number or upper-case A-Z (ie, first character of a
> call-sign). Its easy to start lines with something else, say "/" (as a
> random choice) as a comment, describing what the packet is testing. Does
```

```
^%Sorry, your message was not sent out to 'aprsspec'.
^%Your message quotes too many continuous lines of a previous message.
^%
^%You quoted 19 lines, and this mailing list is set to reject messages
^%which quote more than 15 continuous lines of a previous message.
^%
^%Please resubmit your message, this time quoting fewer lines of the previous message.
```

```
> anyone else's code have this or similar capability? If not, how should
> packets be tagged so as simplify cross-reference between the packets and
> the description? Another option would be to produce two files, one
> containing only the test packets and the other with the same test packets
> plus comments. It would then be up to the tester to correlate the text with
> comments to the action of the code.
> [...]
```

I believe that the APRServe data stream considers a line starting with the  
"#" character to be a comment.

-tjs

---

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---

## 9. [aprsspec] Re: Validation Suite

From: "Curt Mills, WE7U" <[hacker@tc.fluke.com](mailto:hacker@tc.fluke.com)>  
Date: Mon, 11 Sep 2000 16:29:32 -0700 (PDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-108800-2000.09.11-18.37.08--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-108800-2000.09.11-18.37.08--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Mon, 11 Sep 2000, Tim Salo wrote:

> I believe that the APRServe data stream considers a line starting with the  
> "#" character to be a comment.

So does Perl, which I use a lot to process APRS packets off the internet data stream.

Curt Mills, WE7U hacker.NO\_\*SPAM@tc.fluke.com  
Senior Methods Engineer/SysAdmin  
"Lotto: A tax on people who are bad at math." -- unknown  
"Windows: Microsoft's tax on computer illiterates." -- WE7U

---

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---

## 10. [aprsspec] DCC Update

From: Stan Horzepa <[stanzepa@mail2.nai.net](mailto:stanzepa@mail2.nai.net)>  
Date: Mon, 11 Sep 2000 20:01:11 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-108816-2000.09.11-19.09.53--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-108816-2000.09.11-19.09.53--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

19th Annual ARRL/TAPR Digital Communications Conference  
Orlando, FL □ September 22-24, 2000

\*\* Update 9/11/2000 \*\*

A little more than one week away, the 19th Annual ARRL/TAPR Digital Communications Conference is about to begin. For detailed information about the conference, please visit the official DCC web page at <http://www.tapr.org/dcc>.

Registration for the conference will be taken at the door. Friday registration is for an entire afternoon APRS activities, demonstrations, and presentations. Saturday registration includes conference proceedings, lunch, and a full day of presentations. Saturday night includes Banquet, dinner speaker, and prize drawing. Sunday registration is for the PICmicro Design seminar.

Banquet Prize Drawings:  
Grand Prize □ Kenwood TM-D700A (donated by Kenwood)  
2nd Grand Prize □ Palm VII Personal Digital Assistant  
Two Motorola Oncore M12 GPS Evaluation Kits (donated by Synergy Systems, LLC)

Map and coordinates:  
A map of the conference hotel and coordinates are available at <ftp://ftp.tapr.org/dcc/dcc.hotel.map.pdf>

Speakers:  
The following is a list of presenters. Preliminary schedule is available from <ftp://ftp.tapr.org/dcc/2000.dcc.schedule.pdf>

APRS Seminar - Friday September 22, 2000

|                      |                       |
|----------------------|-----------------------|
| John Ackerman, N9UR  | APRS WG               |
| Steve Bible, N7HPR   | T-238 Weather Station |
| John Blowsky, KB2SCS | APRS LOOKUP           |
| Steve Bragg, KA9MVA  | HamHud                |



|                          |                               |
|--------------------------|-------------------------------|
| Bob Bruninga, WB4APR     | APRSdos, satellite, etc.      |
| Steve Dimse, K4HG        | Internet APRS                 |
| Walter Dunckel, KD6VYV   | Serial Control of D7/D700     |
| John Hansen, W2FS        | KISS TNC, D700 Keyboard       |
| Dale Huguley, KG5QD      | Weather Server                |
| Larry Gahagan, AB0JM     | Wildfire Support              |
| Byon Garranrant, N6BG    | TinyTrack                     |
| Mike Musick, N0QBF       | PalmAPRS/Tracker construction |
| Robert Osband, N4SCY     | Public Service with APRS      |
| Tom Schaefer, NY4I       | APRS Email Gateway            |
| Darryl Smith, VK2TDS     | APRS in the 2000 Olympics     |
| The Sprouls, WU2Z/KB2ICI | Mac/Win/XAPRS                 |
| Rob Wittner, KZ5RW       | APRS-CE                       |

Main Session, Paper Presentation - Saturday 23, 2000  
Titles and abstracts are available at  
<http://www.tapr.org/tapr/html/Fcnc19.html>

EasyTrak, A PIC Based Rotor/Radio Controller Interface  
By Steve Bible N7HPR

APRS Tiny Web Pages  
By Bob Bruninga WB4APR

Channel Capacity Simulation of Peer-to-Peer Spread Spectrum Satellite Transponders  
By Matthew Ettus N2MJI

Correlation for Direct Sequence Spread Spectrum  
By Panagiotis Gavalas

PIC-et Radio II: How to Receive AX.25 UI Frames Using Inexpensive PIC Microcontrollers  
By John A. Hansen W2FS

Winlink 2000 ...A Global Ham Message Transfer and Deliver Network  
By Hans Kessler N8PGR, Vic Poor W5SMM, Rick Muething KN6KZB, and Steve Waterman K4CJX

Frequency Offset Acquisition and Tracking Algorithms, Part 1 and Part 2  
By Mohamed K. Nezami

External Common Gateway Interface (CGI) Access to FindU  
By Thomas M. Schaefer NY4I

Server Applications within APRS Internet Server Environment  
By Thomas M. Schaefer NY4I

APRS and the TAPR EasyTrak Az/El Rotor Control System  
By Keith Sproul WU2Z

APRS and Kenwood TM-D700 Voice Messaging  
By Keith Sproul WU2Z and Mark Sproul KB2ICI

Internet Wide Callsign Database using LDAP  
By Mark Sproul KB2ICI

Automatic Voice Relay System  
By Bob Bruninga WB4APR

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

## 11. [aprsspec] Which barometric pressure to use

From: "Pendley, Michael" <[mycall@sandia.gov](mailto:mycall@sandia.gov)>  
Date: Fri, 15 Sep 2000 13:49:53 -0600  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-109511-2000.09.15-14.57.51--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Sorry if this is an old question. A quick search of the archive and the spec did not provide an answer.

The source for my weather data provides two different barometric pressures.

One is absolute and one is adjusted for our local altitude (over 5000 feet here). Which one is customarily encoded into an APRS packet?

Thanks in advance

-Mike, K5ATM

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

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## 12. [aprsspec] Final Update - DCC Orlando, FL Sep 22-24, 2000

From: "Horzepa, Stan" <[Stan\\_Horzepa@adc.com](mailto:Stan_Horzepa@adc.com)>  
Date: Mon, 18 Sep 2000 12:13:50 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-109975-2000.09.18-12.28.00--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-109975-2000.09.18-12.28.00--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

From: Steven R. Bible [<mailto:srbible@gate.net>]  
Sent: Monday, September 18, 2000 12:34 PM  
To: [picsig@lists.tapr.org](mailto:picsig@lists.tapr.org); [tacgps@lists.tapr.org](mailto:tacgps@lists.tapr.org); [wxsig@lists.tapr.org](mailto:wxsig@lists.tapr.org);  
[hfsig@lists.tapr.org](mailto:hfsig@lists.tapr.org); [dsp@lists.tapr.org](mailto:dsp@lists.tapr.org); [ss@lists.tapr.org](mailto:ss@lists.tapr.org)  
Subject: Final Update - DCC Orlando, FL Sep 22-24, 2000

19th Annual ARRL/TAPR Digital Communications Conference  
Orlando, FL - September 22-24, 2000

**\*\* Final Update 9/18/2000 \*\***

Counting down the final days until the 19th Annual ARRL/TAPR Digital Communications Conference this weekend in Orlando, Florida. For detailed information about the conference, please visit the official DCC web page at <http://www.tapr.org/dcc>.

Registration for the conference will be taken at the door. Friday registration is for an entire afternoon APRS activities, demonstrations, and

presentations. Saturday registration includes conference proceedings, lunch, and a full day of presentations. Saturday night includes Banquet, dinner speaker, and prize drawing. Sunday registration is for the PICmicro Design seminar.

DCC Social:

Please join us Friday evening at 7:00 PM for a social get together time. The social is generously hosted by the Packet Radio Users Group of Japan (PRUG).

PRUG Presentation:

Friday night the Packet Radio Users Group of Japan will present talks on their progress on high-speed digital networks in Japan.

Saturday Night Banquet Speaker:

Mr. Doug Campbell, of Triton Network Systems (<http://www.triton-network.com>)

will be our DCC Banquet Speaker. Triton Network Systems is located in Orlando, Florida.

Vice President Product Management, Marketing, & International Business as Vice President of International Sales, Marketing and Product Management, Mr.

Campbell leads the assessment of global community needs and spearheads the development of Triton Network Systems' product and marketing strategies.

Mr. Campbell cultivated his management skills in sales, marketing and product development working 17 years for Nortel Networks. While based in Singapore, he built a multifunctional pan-Asian team, which successfully captured a 100% market share with MCI-WorldCom Asia, successfully introducing a number of new products. Prior to this, Mr. Campbell was instrumental in the establishment of an SDH broadband equipment joint venture in China and served as a member of the company's Board of Directors.

Mr. Campbell received a Bachelor of Engineering Physics degree from the Royal Military College of Canada in Kingston, Canada, and a Master of Business Administration from IMD (University of Lausanne) in Switzerland.

Banquet Prize Drawings:

Grand Prize - Kenwood TM-D700A (donated by Kenwood)  
2nd Grand Prize - Palm VII Personal Digital Assistant (donated by TAPR)  
Two Motorola Oncore M12 GPS Evaluation Kits (donated by Synergy Systems, LLC)  
Microchip PICSTART-PLUS PICmicro Programmer (donated by Microchip)

PIC Seminar Prize Drawing

Microchip MPLAB-ICD (donated by Microchip)

Project and Demonstration Room:

The DCC is a place where people can talk about their projects and gain ideas

for new ones. The Project and Demonstration Room has become a recent DCC tradition where people can bring and display their projects. The room will be located next to the registration room and across the hall from the main presentation room. The Project and Demonstration Room will open at registration time and be closed (locked) 11:00 PM Friday and Saturday night.

Map and coordinates:

A map of the conference hotel and coordinates are available at  
<ftp://ftp.tapr.org/dcc/2000.dcc.hotel.map.pdf>

Speakers:

The following is a list of presenters. PDF version available from  
<ftp://ftp.tapr.org/dcc/2000.dcc.speakers.pdf>

Speaking schedule (subject to change) is available from  
<ftp://ftp.tapr.org/dcc/2000.dcc.schedule.pdf>

APRS Seminar - Friday September 22, 2000

|                          |                               |
|--------------------------|-------------------------------|
| John Ackerman, N9UR      | APRS WG                       |
| Steve Bible, N7HPR       | T-238 Weather Station         |
| John Blowsky, KB2SCS     | APRS LOOKUP                   |
| Bob Bruninga, WB4APR     | APRSdos, satellite, etc.      |
| Steve Dimse, K4HG        | Internet APRS                 |
| Walter Dunckel, KD6VYV   | Serial Control of D7/D700     |
| John Hansen, W2FS        | KISS TNC, D700 Keyboard       |
| Dale Huguley, KG5QD      | Weather Server                |
| Larry Gahagan, AB0JM     | Wildfire Support              |
| Byon Garranrant, N6BG    | TinyTrack                     |
| Mike Musick, N0QBF       | PalmAPRS/Tracker construction |
| Robert Osband, N4SCY     | Public Service with APRS      |
| Tom Schaefer, NY4I       | APRS Email Gateway            |
| Darryl Smith, VK2TDS     | APRS in the 2000 Olympics     |
| The Sprouls, WU2Z/KB2ICI | Mac/Win/XAPRS                 |
| Rob Wittner, KZ5RW       | APRS-CE                       |

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Frequency Offset Acquisition and Tracking Algorithms, Part 1 and Part 2

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APRS and Kenwood TM-D700 Voice Messaging  
By Keith Sproul WU2Z and Mark Sproul KB2ICI

Internet Wide Callsign Database using LDAP  
By Mark Sproul KB2ICI

Automatic Voice Relay System  
By Bob Bruninga WB4APR

Introductory Sessions - Saturday 23, 2000

Intro to Packet Radio  
By John Ackerman, N8UR

Intro to APRS  
By Guy Story, KC5QOI

Intro to Digital Satellites  
By Barry Baines, WD4ASW

Intro to HF Digital  
TBD

Intro to Software Defined Radios  
By Steve Bible, N7HPR

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# October 2000

Original source file: aprsspec.0010

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssid/aprssid/mail\\_archive/aprssid.0010](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprssid/mail_archive/aprssid.0010)

## 1. [aprssid] ADMIN: Monthly Message

From: Stan Horzempa <stanzepa@mail2.nai.net>  
Date: Sun, 01 Oct 2000 22:54:22 +0000  
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>  
Message-ID: <LYR11589-112302-2000.10.01-22.03.48--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

(This message is posted on the APRS SPEC SIG on a monthly basis.)

### PURPOSE

The purpose of the APRS SPEC SIG is to provide a forum for folks interested in discussing the APRS protocol specification.

### POSTING MESSAGES

To post messages to the APRS SPEC SIG, send email to [aprssid@lists.tapr.org](mailto:aprssid@lists.tapr.org)

### APRS SPEC SIG RULES

The APRS SPEC SIG has a few simple rules:

- . Be courteous. Abusive, insulting, or rude behavior demonstrated towards another list member is a violation of this rule.
- . Stick to the subject, i.e., the APRS protocol specification. Subjects that are only tangentially related to the APRS protocol specification (like "what kind of printer should I buy to print out my copy of the APRS specification?") may be considered off-topic. If you start a message with "this is off-topic" then you are violating this rule.
- . Be succinct when composing a message. (The APRS SPEC SIG software has been optioned to limit the length of each message.)
- . When quoting a previous message, only quote the parts of that message you are referencing. (The APRS SPEC SIG software has been optioned to limit the length of a quote.)
- . Do not send messages in HTML or Rich Text format.
- . Do not send attachments.
- . Cross-posting is not permitted. (The APRS SPEC SIG software has been optioned to prevent cross-posting.)
- . The APRS SPEC SIG administrator reserves the right to suspend or ban any list member who violates these rules.

### UNSUBSCRIBING

To unsubscribe from the APRS SPEC SIG, follow the directions you will find at the bottom of each message you receive from the APRS SPEC.

### QUESTIONS, COMMENTS, ETC.

If you have any questions, comments, etc. concerning the APRS SPEC, please email the APRS SPEC SIG administrator at the address below.

Stan Horzempa, WA1LOU, [wallou@tapr.org](mailto:wallou@tapr.org)

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

## 2. [aprssid] Call Test

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Sun, 1 Oct 2000 21:47:22 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-112318-2000.10.01-23.56.09--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, group,

Well, here is the first in what should become a test suite for APRS code writers. This one isn't the most critical ... it provides a multitude of STATUS packets with various valid and invalid call signs. If you don't do any call validation, then don't bother. But, if you reject calls like TAH0E (thats a zero) or WAB97C, then use this to test your call filter. There are about 15 valid calls (each including no SSID, one digit SSID, and two digit SSID). And, there are about 100 additional invalid calls. They are systematic order.

The file includes comment lines. The "/\*" is used as the first two characters of every comment and this is the only place this pair appears. To change it to other comment tokens, simply do a search-and-replace to change to your appropriate comment character(s).

A very extensive test for the destination field comes next.

You can find the file at:

<http://i6.yimg.com/6/6c78a2c3/h/ac890c30/calls.txt>

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

---

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---

### 3. [aprsspec] What to do about invalid Destintation?

From: Jim Wagner <wagnerj@proaxis.com>  
Date: Sun, 1 Oct 2000 21:57:52 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-112342-2000.10.02-00.06.18--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hello, group -

Your comments are solicited.

Today, the following two packets were received.

KB7ILD-9>GPSLK,W7VHY-10\*,WIDE5-1:\$GPRMC,220306,A,4736.8947,N,12219.4088,W,000.0,000.0,011000,018.8,E\*69

KD7NM-9>GPSMV,W7AA-10\*,WIDE5-3:\$GPRMC,220342,A,4745.988,N,12220.638,W,000.0,357.2,011000,018.9,E\*67

I think we all know what they are SUPPOSED to indicated, but don't. As a refresher, here is the text from the spec...

=====  
AX.25 Destination Address

Where it is not possible to include a symbol in the Information field, the symbol may be specified in the AX.25 Destination Address instead, using the following generic destination addresses: GPSxyz, GPSCnn, GPSEnn, SPCxyz and SYMxyz.

The characters xy and nn refer to entries in the APRS Symbol Tables. For example, from the Primary Symbol Table, a tracker could use the Destination Address GPSMVV V or GPS30 to specify a "car" icon.

The character z specifies the overlay character (where permitted), or is a V V

(space) - the space is a filler character, as all AX.25 addresses must be exactly 6 characters long.

=====

Note, particularly, that last sentence. How do we handle destination addresses which are NOT 6 characters long?

(1) Do we assume that a space was intended?

(2) Do we reject it as an invalid APRS packet?

(3) Do we accept it as an APRS packet, but do not process the destination address to be anything other than a non-symbol encoding character sequence?

Many thanks,

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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---

#### 4. [aprsspec] Re: Call Test

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Sun, 1 Oct 2000 22:25:06 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-112344-2000.10.02-00.33.36--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I find no valid status packets in the file below. At least, valid APRS status packets.

----- Original Message -----

From: "Jim Wagner" <wagnerj@proaxis.com>

> Well, here is the first in what should become a test suite for APRS code  
> writers. This one isn't the most critical ... it provides a multitude of  
> STATUS packets with various valid and invalid call signs. If you don't do  
> any call validation, then don't bother. But, if you reject calls like TAH0E  
> (thats a zero) or WAB97C, then use this to test your call filter. There are  
> about 15 valid calls (each including no SSID, one digit SSID, and two digit  
> SSID). And, there are about 100 additional invalid calls. They are  
> systematic order.

> <http://i6.yimg.com/6/6c78a2c3/h/ac890c30/calls.txt>

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---

#### 5. [aprsspec] Re: What to do about invalid Destintation?

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Sun, 1 Oct 2000 22:27:37 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-112345-2000.10.02-00.35.57--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> Hello, group -  
>  
> Your comments are solicited.  
>

```
> Today, the following two packets were received.
>
> KB7ILD-9>GPSLK,W7VHY-10*,WIDE5-1:$GPRMC,220306,A,4736.8947,N,12219.4088,W,000.0,
> 000.0,011000,018.8,E*69
>
> KD7NM-9>GPSMV,W7AA-10*,WIDE5-3:$GPRMC,220342,A,4745.988,N,12220.638,W,000.0,357.
> 2,011000,018.9,E*67
>
> I think we all know what they are SUPPOSED to indicated, but don't. As a
> refresher, here is the text from the spec...
```

What is wrong with the above? The TO fields are perfectly valid APRS TO fields.

Brent KH2Z

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 6. [aprsspec] Re: What to do about invalid Destintation?

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Sun, 1 Oct 2000 22:32:39 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-112346-2000.10.02-00.41.01--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-112346-2000.10.02-00.41.01--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

```
> =====
> AX.25 Destination Address
>
> Where it is not possible to include a symbol in the Information field, the
> symbol may be specified in the AX.25 Destination Address instead, using the
> following generic destination addresses: GPSxyz, GPSCnn, GPSEnn,
> SPCxyz and SYMxyz.
>
> The characters xy and nn refer to entries in the APRS Symbol Tables. For
> example, from the Primary Symbol Table, a tracker could use the Destination
> Address GPMVV V or GPS30 to specify a "car" icon.
>
> The character z specifies the overlay character (where permitted), or is a V V
> (space) - the space is a filler character, as all AX.25 addresses must be
> exactly 6 characters long.
```

The Z in GPSxyz is optional. Not required. Trailing spaces are ignored. Remember that your FROM in the AX.25 is also 6 characters. A callsign like KH2Z is padded with 2 trailing spaces. They are then ignored on receive.

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 7. [aprsspec] Re: Call Test

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Sun, 1 Oct 2000 22:39:22 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-112347-2000.10.02-00.47.49--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-112347-2000.10.02-00.47.49--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

```
> I find no valid status packets in the file below. At least, valid APRS status packets.
I amend what I said, no timestamped APRS status packets, which basically invalidates my previous
statement. But note, there is no restriction that a callsign needs to be a valid Amateur Radio
callsign. Thus, the example TAH0E is perfectly valid. It just is not an Amateur Radio callsign.
```

```
> ----- Original Message -----
> From: "Jim Wagner" <wagnerj@proaxis.com>
>
>
> > Well, here is the first in what should become a test suite for APRS code
> > writers. This one isn't the most critical ... it provides a multitude of
> > STATUS packes with various valid and invalid call signs. If you don't do
> > any call validation, then don't bother. But, if you reject calls like TAH0E
> > (thats a zero) or WAB97C, then use this to test your call filter. There are
> > about 15 valid calls (each including no SSID, one digit SSID, and two digit
```



> > SSID). And, there are about 100 additional invalid calls. They are  
> > systematic order.  
>  
>  
> > <http://i6.yimg.com/6/6c78a2c3/h/ac890c30/calls.txt>

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---

## 8. [aprsspec] Re: Call Test

From: Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Mon, 2 Oct 2000 08:49:07 +0100  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-112360-2000.10.02-02.58.12--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-112360-2000.10.02-02.58.12--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

In article <[LYR13460-112318-2000.10.01-23.56.09--roger#peaksys.co.uk@lists.tapr.org](mailto:LYR13460-112318-2000.10.01-23.56.09--roger#peaksys.co.uk@lists.tapr.org)>, Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)> writes  
>Hello, group,  
>  
>Well, here is the first in what should become a test suite for APRS code  
>writers. This one isn't the most critical ... it provides a multitude of  
>STATUS packes with various valid and invalid call signs.  
[snip]

I thought the source address of an APRS frame could be anything that is  
a valid AX25 address as defined in the AX25 spec. For example, don't  
remote digis and other such devices sometimes use descriptive addresses  
that wouldn't validate under normal callsign rules?

--

Roger Barker, G4IDE - [roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

---

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---

## 9. [aprsspec] Re: Call Test

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Mon, 2 Oct 2000 08:52:18 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-112373-2000.10.02-08.03.09--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-112373-2000.10.02-08.03.09--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I'm not sure i understand the practicality of filtering out non-valid HAM  
calls in APRS. Many real-applications of APRS use tactical calls to avoid  
confusion out in the field. Such a filter may be a nice option, though I  
don't know who would use it, because sometimes the only thing interesting  
to watch is the special events. Or am I missing something?

Bob

On Sun, 1 Oct 2000, Jim Wagner wrote:

> Well, here is the first in what should become a test suite for APRS code  
> writers. This one isn't the most critical ... it provides a multitude of  
> STATUS packes with various valid and invalid call signs. If you don't do  
> any call validation, then don't bother. But, if you reject calls like TAH0E  
> (thats a zero) or WAB97C, then use this to test your call filter. There are  
>  
> <http://i6.yimg.com/6/6c78a2c3/h/ac890c30/calls.txt>  
>  
> Jim Wagner  
> Oregon Research Electronics

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

## 10. [aprrspec] Re: What to do about invalid Destintation?

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 2 Oct 2000 08:56:16 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-112374-2000.10.02-08.05.18--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 1 Oct 2000, Jim Wagner wrote:

```
> KB7ILD-9>GPSLK,W7VHY-10*,WIDE5-1:$GPRMC,220306,A,4736.8947,N,12219...
> =====
> AX.25 Destination Address
>
> The character z specifies the overlay character (where permitted), or is a V V
> (space) - the space is a filler character, as all AX.25 addresses must be
> exactly 6 characters long.
> =====
>
> Note, particularly, that last sentence. How do we handle destination
> addresses which are NOT 6 characters long?
>
> (1) Do we assume that a space was intended?
```

All callsigns in AX.25 are 7 bytes long, no matter how many characters are used. The ADDRESS field is fixed length. Most TNC's may truncate the call if less characters are used, but they are all transmitted as spaces.

bob

---

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

---

## 11. [aprrspec] Re: Call Test

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Mon, 2 Oct 2000 09:01:10 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-112375-2000.10.02-08.10.03--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 1 Oct 2000, Brent Hildebrand wrote:

```
> I find no valid status packets in the file below. At least, valid APRS status packets.
```

Anything that begins with a ">" is a valid STATUS packet, though stations are encouraged to include a date-time stamp at the beginning if their status is changing...?

Or am I missing something?  
BOB

---

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---

## 12. [aprrspec] Re: Call Test

From: "Brent Hildebrand" <bhildebrand@earthlink.net>  
Date: Mon, 2 Oct 2000 06:14:23 -0700  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Cc: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-112377-2000.10.02-08.23.18--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> On Sun, 1 Oct 2000, Brent Hildebrand wrote:

>

```
> > I find no valid status packets in the file below. At least, valid APRS status packets.
```

>

```
> Anything that begins with a ">" is a valid STATUS packet, though stations
> are encouraged to include a date-time stamp at the beginning if their
> status is changing...?
```

>

> Or am I missing something?  
> Bob

Read my rebuttal to myself.

---

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### 13. [aprsspec] Re: What to do about invalid Destination?

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 2 Oct 2000 22:10:06 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-112534-2000.10.03-00.18.35--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-112534-2000.10.03-00.18.35--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello, List ...

Both Bob Bruninga and Brent Hildebrand pointed out that many TNCs do not display terminating spaces in the Destination Address field, just as they do not display terminating spaces in the From Address field.

This observation leads to the very slightly picky observation about the paragraph in the specs reading:

> The character z specifies the overlay character (where permitted), or is  
> a " "  
> (space) - the space is a filler character, as all AX.25 addresses must be  
> exactly 6 characters long.

The same requirement is not stated for the From Call, it is automatically fulfilled by the TNC. Yet, with the preceeding statement, it is easy to believe that the Destination Address to be parsed by the software will have, in this case, exactly 6 characters, just like the address field of a message will have exactly 9 characters.

Now I know better and my code will reflect this fact.

Many thanks to both Brent and Bob...

Jim Wagner, KA7EHK

Jim Wagner  
Oregon Research Electronics

-----  

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| <a href="mailto:wagnerj@proaxis.com">wagnerj@proaxis.com</a>             | Tangent, Oregon 97389      |
| <a href="mailto:KA7EHK@KC7KFE.OR.USA.NOAM">KA7EHK@KC7KFE.OR.USA.NOAM</a> | near Corvallis OR, home of |
| <a href="mailto:ka7ehk@yahoo.com">ka7ehk@yahoo.com</a>                   | Oregon State University    |

  
-----

A computer without Windows is like a cake without mustard. - anonymous

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---

### 14. [aprsspec] Re: Call Test

From: Jim Wagner <[wagnerj@proaxis.com](mailto:wagnerj@proaxis.com)>  
Date: Mon, 2 Oct 2000 22:10:12 -0700  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-112535-2000.10.03-00.18.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-112535-2000.10.03-00.18.44--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello, List....

Bob Bruninga and Brent Hildebrand have just pointed out that (at least some) APRS programs do no call filtering because of several reasons including:

(1) Commercial application

(2) FCC regulations does not require "real" calls in the From Field of a packet, thus allowing "tactical calls" such as RED3.

This test file is not required to be used by anyone. If you don't do call filtering, then don't bother with it. But, if you do, its available.

For me, personally, I have no interest in commercial application and will reject any request for commercial licensing.

As for the second point, what FCC regs allows does not make it right. I find no justification for hams, especially using packet, to use anything other than their real call. Special events can be handled by SPCL in the destination field. But, I had best stop before the flames from my nostrils melt my keypad!

The test file does have one potential problem - it does not contain CRLF line terminators; there are only CRs. It will be replaced with one containing CRLFs. If you wish to use it, it is at

<http://i6.yimg.com/6/6c78a2c3/h/ac890c30/calls.txt>

If you don't, please just forget about it. There will be a second one shortly providing a very extensive test of non-MicE destination address fields. That will be followed by a short file to test discrimination of local vs digipeated packets.

Depending on their sizes, there will be several to quite a few following that to test parsing of the different types of APRS packets.

Cheers,  
Jim, KA7EHK

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.0R.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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---

## 15. [aprsspec] Re: Call Test

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Tue, 3 Oct 2000 12:12:57 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-112597-2000.10.03-11.22.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 2 Oct 2000, Jim Wagner wrote concerning APRS callsigns:

> As for the second point, what FCC regs allows does not make it right. I  
> find no justification for hams, especially using packet, to use anything  
> other than their real call. Special events can be handled by SPCL in the  
> destination field. But, I had best stop before the flames from my nostrils  
> melt my keypad!

I think you might be missing how Tactical calls are used at APRS special events to eliminate confusion and ambiguity on maps. Commonly used tactical calls in my area are:

LEAD, TAIL, VIP1, VIP2, VIPn ...  
CHASE1, CHASE2... CHASEn  
SAG1, SAG2,... SAGn  
H2O, RANGER, MEDIC1, MEDIC2, ...

These assure that there is no mistake in identification of an object on the maps. They follow the FCC rules by including the HAM call in the BText every 10 minutes.

de WB4APR, Bob

---

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## 16. [aprsspec] Re: Call Test

From: "Woodrick, Ed" <ewoodrick@ed-com.com>  
Date: Tue, 3 Oct 2000 13:18:52 -0400  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-112600-2000.10.03-12.27.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Jim,

There might be reasons other than "commercial" applications. Aside from the basic tactical type calls already mentioned, you might want to consider non-profit or disaster relief organizations when making rules. Other organizations often use tactical calls for all communications, and there's a lot of non-FCC organizations that don't even use the 6 letter calls. Red Cross, Civil Air Patrol, MARS are a few examples of organizations that most software authors have given access to their programs because of their benevolent nature.

Callsign restriction adds a level of complexity that just really isn't needed. If I just had to do some filtering, I'd probably go for NOCALL and that's about it.

Ed Woodrick

-----Original Message-----

From: Jim Wagner [mailto:wagnerj@proaxis.com]  
Posted At: Tuesday, October 03, 2000 1:10 AM  
Posted To: Mail-Lists.APRS  
Conversation: [aprsspec] Re: Call Test  
Subject: [aprsspec] Re: Call Test

Hello, List....

Bob Bruninga and Brent Hildebrand have just pointed out that (at least some) APRS programs do no call filtering because of several reasons including:

(1) Commercial application

(2) FCC regulations does not require "real" calls in the From Field of a packet, thus allowing "tactical calls" such as RED3.

This test file is not required to be used by anyone. If you don't do call filtering, then don't bother with it. But, if you do, its available.

For me, personally, I have no interest in commercial application and will reject any request for commercial licensing.

As for the second point, what FCC regs allows does not make it right. I find no justification for hams, especially using packet, to use anything other than their real call. Special events can be handled by SPCL in the destination field. But, I had best stop before the flames from my nostrils melt my keypad!

The test file does have one potential problem - it does not contain CRLF line terminators; there are only CRs. It will be replaced with one containing CRLFs. If you wish to use it, it is at

<http://i6.yimg.com/6/6c78a2c3/h/ac890c30/calls.txt>

If you don't, please just forget about it. There will be a second one shortly providing a very extensive test of non-MicE destination address fields. That will be followed by a short file to test discrimination of local vs digipeated packets.

Depending on their sizes, there will be several to quite a few following that to test parsing of the different types of APRS packets.

Cheers,

Jim, KA7EHK

Jim Wagner  
Oregon Research Electronics

-----  
wagnerj@proaxis.com           Tangent, Oregon 97389  
KA7EHK@KC7KFE.OR.USA.NOAM    near Corvallis OR, home of  
ka7ehk@yahoo.com           Oregon State University  
-----

A computer without Windows is like a cake without mustard. - anonymous

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---

## 17. [aprsspec] Re: Call Test

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>  
Date: Tue, 3 Oct 2000 12:47:49 -0700 (PDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-112610-2000.10.03-14.56.17--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 2 Oct 2000, Jim Wagner wrote concerning APRS callsigns:

> As for the second point, what FCC regs allows does not make it right. I  
> find no justification for hams, especially using packet, to use anything  
> other than their real call. Special events can be handled by SPCL in the  
> destination field. But, I had best stop before the flames from my nostrils  
> melt my keypad!

I'll melt my keypad a little ;-) )

Search & Rescue:

-----  
AIR1, AIR2           (Helicopters)  
TEAM1, TEAM2       (Ground teams)  
DOG7, DOG8       (Search dog teams)  
R50, R51           (Vehicles)  
BASE               (Command center for the search)

In each case above, we use the same tactical call on APRS as their radio tactical call. This matches the white boards we use to keep track of status for each team. The radios we use for voice are on a county search frequency, so tactical calls are ok there. APRS used is on amateur frequencies.

Tactical callsigns are critical in reducing the confusion factor. Things get confusing in a hurry if we must translate from callsign/SSID to radio tactical callsigns at the point when an injured person is found (the busiest/most confusing part of the operation). KISS principle in real life here. Seconds really do count.

The sheriff himself looks at the map at times, and doesn't understand or care to understand callsigns/SSID's. He wants to know instantly where each team is.

In this case (support of a search operation) callsigns are of secondary importance. The more hidden they are from logistics and operations people, the better. I set them up to broadcast just enough to keep it legal and no more. The APRS software will show only the tactical callsigns on the topo maps. The hams running the APRS station can determine callsigns if/when necessary.

Curt Mills, WE7U                                   hacker.N0\_\*SPAM@tc.fluke.com  
Senior Methods Engineer/SysAdmin  
"Lotto:     A tax on people who are bad at math." -- unknown  
"Windows: Microsoft's tax on computer illiterates." -- WE7U

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## 18. [aprsspec] Validation of packets (opinion)

From: Bruno Quesnel <[quesnelb@ve2.ele.etsmtl.ca](mailto:quesnelb@ve2.ele.etsmtl.ca)>  
Date: Mon, 09 Oct 2000 16:55:48 -0400  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapir.org](mailto:aprsspec@lists.tapir.org)>  
Message-ID: <LYR11589-113988-2000.10.09-16.04.30--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Hi to all,

I'm up to a point where validation of packets that comes in is necessary to prevent the packets from crashing the application.

For now, my version of APRSD is extracting the Callsign up to the first ">" character, the path until the first ":" character and the rest goes into the data of the packet. I also check to see if any field goes beyond a certain limit in size.

Is there any basic validation that can be done other than checking these basic things? Is there a point in going further than this in the IGATE code?

Please answer back. Any opinion is considered and welcomed...

PS : for those of you who may have seen a version that correspond to 2.2.0 SGI, well that's me... Getting there. The server part is coming pretty soon and should be in test for the Montreal IGATE.  
(<http://ve2.ele.etsmtl.ca/aprs/aprsdev.html> for more information and updated information on the dev process)

--  
Bruno Quesnel  
Genie Electrique  
Electrical Engineering  
Ecole de Technologies Superieure  
[va2bmg@videotron.ca](mailto:va2bmg@videotron.ca)  
[quesnelb@ve2.ele.etsmtl.ca](mailto:quesnelb@ve2.ele.etsmtl.ca)  
VA2BMG  
<http://www.findu.com/cgi-bin/find.cgi?va2bmg>

---

## 19. [aprsspec] Minutes De-Coding

From: "Rich Beckwith" <[Rich@dps.state.mo.us](mailto:Rich@dps.state.mo.us)>  
Date: Wed, 25 Oct 2000 12:55:23 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapir.org](mailto:aprsspec@lists.tapir.org)>  
Message-ID: <LYR11589-116478-2000.10.25-13.05.22--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Page 45 of the APRS Protocol Reference provides a table for Mic-E longitude Degrees Encoding.

If we have already determined the offset from the Destination address, what is the purpose of displaying the Long Offset in the table? (+100/+0)

Won't (D-28) + Offset work in all cases?

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Questions regarding the SIG go to the SIG administrator: [wallou@tapir.org](mailto:wallou@tapir.org)

---

## 20. [aprsspec] Grid Squares

From: Bob Bruninga <[bruninga@nadn.navy.mil](mailto:bruninga@nadn.navy.mil)>  
Date: Thu, 26 Oct 2000 09:46:28 -0400 (EDT)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapir.org](mailto:aprsspec@lists.tapir.org)>  
Cc: [aprsspec@lists.tapir.org](mailto:aprsspec@lists.tapir.org)  
Message-ID: <LYR11589-116589-2000.10.26-08.57.06--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

ARGH!!!!!!! I just checked the spec, and it is wrong about grid squares.. We worked long and hard to get everyone on the same page with regard to this new format for GRID SQUARES. But now I see that the implementation of the wording in the spec, put it in the wrong place. Of course it is entirely my fault for not finding this prior to publication...

It is under the MIC-E heading and this is completely incorrect. It has nothing to do with the Mic-E. It was supposed to replace the "MAIDENHEAD" section on page 33. It has nothing to do with the Mic-E on page 55!

No wonder everyone is confused... ARGH...

The preferred format for GRID SQUARES is >GG##GG/\$ ...

The reason for this is because it \*can be received on a THD7 or D700\* and because it permits the inclusion of ICONS which the older [GG##GG] did not. Maps without ICONS are quite uninteresting... Mobiles and HT's that cannot receive grids are also a disadvantage...

I don't know what we do officially about this mixup, but everyone with a THD7 or D700 would probably prefer that grid reports be in this format so they can receive them and not be left in the dark... Unfortunately, they will not be "decoded" as an actual posit, but they will be "received". The [] format will not even be received...

For backwards compatibiliy, I will put the [GG##gg] format back into APRSdos for the upcoming Meteor Shower activities. But it will leave out everyone that could try a new first.... Moible or HT MS!

Bob

---

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---

## 21. [aprsspec] RE: Grid Squares

From: "Scott-KC5JGV" <kc5jgv@arrl.net>  
Date: Thu, 26 Oct 2000 10:43:55 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-116596-2000.10.26-10.56.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hey Bob, don't get upset, Grid Squares are hard to understand sometimes. Let me tell you a funny story, time out from APRS for a sec.....

When I was wild a crazy and in the Marine Corps, I was stationed on the island of Okinawa, Japan. One of the things that we always enjoyed doing to break up the monotony, was to send a new Marine on an impossible mission. Such as sending a guy over to the supply depot to get a BA-1100-November with a ST-Ring attached. Translation, a BALLOON AND STRING!

Well, the best was one day we sent a poor feller over to supply to get a Box of Grid Squares. When he left we called ahead and told them to tell him they'd just run out, but they knew another area supply to go get them. Well, to make a long story short, the poor guy ended up carrying a box on his shoulder all the way across the small base we were at with the words, GRID SQUARES, on it! It took him a long time to live that one down!

So, when your over there kicking your toe against the desk, think that you made a big mistake, just think about how embarrassing it really could be!

Good Day!

73,  
Scott

Need Help with APRS?  
<http://www.aprshelp.com>  
Need a 12v computer for APRS?  
<http://www.compu-comm.com>

-----Original Message-----

From: bounce-aprsspec-14466@lists.tapr.org  
[mailto:bounce-aprsspec-14466@lists.tapr.org]On Behalf Of Bob Bruninga  
Sent: Thursday, October 26, 2000 6:46 AM  
To: APRS Spec Discussion List  
Cc: aprsspec@lists.tapr.org  
Subject: [aprsspec] Grid Squares



ARGH!!!!!!! I just checked the spec, and it is wrong about grid squares.. We worked long and hard to get everyone on the same page with regard to this new format for GRID SQUARES. But now I see that the implementation of the wording in the spec, put it in the wrong place. Of course it is entirely my fault for not finding this prior to publication...

It is under the MIC-E heading and this is completely incorrect. It has nothing to do with the Mic-E. It was supposed to replace the "MAIDENHEAD" section on page 33. It has nothing to do with the Mic-E on page 55!

No wonder everyone is confused... ARGH...

The preferred format for GRID SQUARES is >GG##GG/\$ ...

The reason for this is because it \*can be received on a THD7 or D700\* and because it permits the inclusion of ICONS which the older [GG##GG] did not. Maps without ICONS are quite uninteresting... Mobiles and HT's that cannot receive grids are also a disadvantage...

I don't know what we do officially about this mixup, but everyone with a THD7 or D700 would probably prefer that grid reports be in this format so they can receive them and not be left in the dark... Unfortunately, they will not be "decoded" as an actual posit, but they will be "received". The [] format will not even be received...

For backwards compatibility, I will put the [GG##gg] format back into APRSdos for the upcoming Meteor Shower activities. But it will leave out everyone that could try a new first.... Mobile or HT MS!

Bob

---

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---

## 22. [aprsspec] Re: APRSdos Meteor Mode.. OK

From: Bob Bruninga <bruninga@nadn.navy.mil>  
Date: Thu, 26 Oct 2000 12:00:06 -0400 (EDT)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Cc: "Ev Tupis (W2EV)" <propnet@greeceny.com>, Robert Bruninga <bruninga@arctic.usna.edu>, aprsspec@lists.tapir.org  
Message-ID: <LYR11589-116598-2000.10.26-11.10.10--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

Bob said:

> > Maiden head locator was put under the MIC-E heading and this is ...  
> > incorrect. It was supposed to replace the "MAIDENHEAD" section on page  
> > 33. It has nothing to do with the Mic-E!  
>

Roger replied: > It's also in the Status Reports section on page 82.

OK, I was wrong and confused as well by the (now) 3 different references to the GRID-SQUARE Format. So I guess it is OK as written, but misleading. I would have preferred that the page 33 reference INCLUDE the >GG##gg/\$ format as well with the note that it is the only grid format receivable by the Kenwoods...

Bob

---

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# November 2000

Original source file: aprsspec.0011

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssid/aprssid/mail\\_archive/aprssid.0011](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprssid/mail_archive/aprssid.0011)

## 1. [aprssid] Weather reports...

From: Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Mon, 6 Nov 2000 12:58:33 +0000  
To: "APRS Spec Discussion List" <[aprssid@lists.tapr.org](mailto:aprssid@lists.tapr.org)>  
Message-ID: <LYR11589-118388-2000.11.06-07.09.42--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The following comment occurs on page 64 of the spec in the "Positionless Weather Data" section:-

"Note: The weather report must include at least the MDHM date/timestamp, wind direction, wind speed, gust and temperature, but the remaining parameters may be in a different order (or may not even exist)."

The way the spec is written, that comment appears to only apply to "Position Weather Reports", but is it in fact also supposed to apply to "Complete Weather Reports"?

The reason I ask is that it has been reported to me that the Kenwood radios appear not to recognise a "Complete Weather Report" unless it contains a gust value. Without the gust value they regard it as being a mobile station. (Note - I haven't verified this myself, because I don't own a Kenwood.)

--  
Roger Barker, G4IDE - [roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

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## 2. [aprssid] Re: Weather reports...

From: "Roger Barker" <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Mon, 6 Nov 2000 7:38:34  
To: "APRS Spec Discussion List" <[aprssid@lists.tapr.org](mailto:aprssid@lists.tapr.org)>  
Message-ID: <LYR11589-118390-2000.11.06-07.48.35--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 11/06/00, "Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>" wrote:  
[snip]  
> "Position Weather Reports", but is it in fact also supposed to apply to  
^^^^^^ Typo! Should, of course, be "Positionless".

Roger, G4IDE

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## 3. [aprssid] Re: Weather reports... (fwd)

From: Bob Bruninga <[bruninga@usna.edu](mailto:bruninga@usna.edu)>  
Date: Mon, 6 Nov 2000 10:39:32 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprssid@lists.tapr.org](mailto:aprssid@lists.tapr.org)>  
Message-ID: <LYR11589-118416-2000.11.06-09.50.08--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 6 Nov 2000, Roger Barker wrote:

> on page 64 of the spec in the "Positionless Weather Data" section:-  
>  
> "Note: The weather report must include at least the MDHM date/timestamp,  
> wind direction, wind speed, gust and temperature, but the remaining  
> parameters may be in a different order (or may not even exist)."  
>  
> ... does it also apply to "Complete Weather Reports"?  
>  
> ... Kenwood radios appear not to recognise a "Complete Weather Report"  
> unless it contains a gust value. Without the gust value they regard it  
> as being a mobile station...

Yes, in general, in order to ignore all the WinAPRS WX stations that are sending weatherless positions, the presence of the "t" and "g" are used as verifiers of weather data included within a "complete" wx report.

de WB4APR< Bob

---

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---

#### 4. [aprsspec] Re: Weather reports...

From: Roger Barker <roger@peaksys.co.uk>  
Date: Mon, 6 Nov 2000 16:54:37 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-118435-2000.11.06-11.05.23--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <Pine.GS0.4.05L.10011061022330.15394-100000@arctic>, Bob Bruninga <bruninga@usna.edu> writes  
>On Mon, 6 Nov 2000, Roger Barker wrote:  
>> The following comment occurs on page 64 of the spec in the "Positionless  
>> Weather Data" section:-  
>> "Note: The weather report must include at least the MDHM date/timestamp,  
>> wind direction, wind speed, gust and temperature, but the remaining  
>> parameters may be in a different order (or may not even exist)."  
>> The way the spec is written, that comment appears to only apply to  
>> "Position Weather Reports", but is it in fact also supposed to apply to  
>> "Complete Weather Reports"?  
[snip to keep the list server happy]  
>Yes, in general, in order to ignore all the WinAPRS WX stations that are  
>sending weatherless positions, the presence of the "t" and "g" are used as  
>verifiers of weather data included within a "complete" wx report.

I could appreciate that, except that only the Kenwood radios seem to be ignoring it. The format of the beacons in question is:-

=5258.24N/00002.76W\_000/000t050r000P035h93b09750

I'm \*told\* that the Kenwoods regard that as being a mobile station, and ignore the weather data. (DOS APRS and WinAPRS both regard it as a wx station, and interpret the data as a wx report.)

However, I was really asking about what that section of the spec is supposed to be saying. If it is supposed to be saying that the 'g' and 't' requirement applies to "Complete Weather Reports", then, to me, the way it is currently worded doesn't say that, because the requirement is embedded in "Positionless Weather Data" inside "Positionless Weather Reports".

I asked the question because, at the moment, I suppress the gust field in the weather report if the wind speed is zero. I was quite surprised to be told that the Kenwood radios don't regard such reports as being weather data. I then looked at the spec, and concluded that what I was doing was ok...

--

Roger Barker, G4IDE - roger@peaksys.co.uk  
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---

#### 5. [aprsspec] Re: Weather reports...

From: Bob Bruninga <bruninga@usna.edu>  
Date: Mon, 6 Nov 2000 13:49:55 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-118443-2000.11.06-13.00.00--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 6 Nov 2000, Roger Barker wrote:

```
> >Yes... in order to ignore all the WinAPRS WX stations that sending
> >WX-less posits, the "t" and "g" are used as verifiers...
>
> I could appreciate that, except that only the Kenwood radios seem to be
> ignoring it. The format of the beacons in question is:-
> =5258.24N/00002.76W_000/000t050r000P035h93b09750
> I'm *told* that the Kenwoods regard that as being a mobile station, and
> ignore the weather data. (DOS APRS and WinAPRS both regard it as a wx
> station, and interpret the data as a wx report.)
```

Yes, it is because of this ambiguity that we put that statement in the spec. Prior to such a spec, we all had our own little tricks for determining if the WinAPRS packet had valid WX data or not. Most of us still probably use whatever code we already had. Kenwood requires the "g" and the "t" as we meant to codify in the spec. APRSdos requires either a "g" \*or\* a "t". In any case, the best way to assure its valid WX is to require both the "t" and the "g" in the right places...

```
> However, I was really asking about what that section of the spec is
> supposed to be saying. If it is supposed to be saying that the 'g' and
> 't' requirement applies to "Complete Weather Reports", then, to me, the
> way it is currently worded doesn't say that, because the requirement is
> embedded in "Positionless Weather Data" inside "Positionless Weather
> Reports".
```

Yes, it should apply to both. That should be fixed in the next version...  
Ian?

de WB4APR, Bob

---

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---

## 6. [aprsspec] Invalid packet

```
From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>
Date: Tue, 07 Nov 2000 23:27:36 -0500
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-118634-2000.11.07-22.37.29--lyris.aprsspec#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Hi to all,

I've been running my server for a little while and looking at the packets that are being refused, many of them are preceded by the "cmd:" string and then a valid packet (after a quick look at the following packet).

Would it be sound to remove the leading "cmd:" string in front of a packet, then retreat the packet to see if it's valid or still reject it because it is bad....

Thanks in advance

--

|                                  |                                                                                                         |
|----------------------------------|---------------------------------------------------------------------------------------------------------|
| Bruno Quesnel                    | <a href="mailto:va2bmg@videotron.ca">va2bmg@videotron.ca</a>                                            |
| Genie Electrique                 | <a href="mailto:quesnelb@ve2.ele.etsmtl.ca">quesnelb@ve2.ele.etsmtl.ca</a>                              |
| Electrical Engineering           | VA2BMG                                                                                                  |
| Ecole de Technologies Superieure | <a href="http://www.findu.com/cgi-bin/find.cgi?va2bmg">http://www.findu.com/cgi-bin/find.cgi?va2bmg</a> |

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---

## 7. [aprsspec] So what does a D7(a)g supportD7(a)g

```
From: "Pendley, Michael" <mycall@sandia.gov>
Date: Wed, 8 Nov 2000 08:24:24 -0700
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>
Message-ID: <LYR11589-118698-2000.11.08-09.35.10--lyris.aprsspec#tapr.org@lists.tapr.org>
```

Rendered body type: text/plain

The tracker I am developing seems to work -- but not with a D7(a)g in APRS mode.

The packet format is a simple "no timestamp lat/long position report" (second page of chapter 8 -- page 32 of draft 1.0.1m) with course/speed in the data extension.

Packet transmission seems to be OK (i.e. bit timing, X-25 format, etc) since the packet gets through the D7 just fine when the TNC is put in packet mode and my local DIGI repeats the packet.

The APRS data seems to be formatted correctly since APRS+SA is happy with what comes out of the D7 (in packet mode) and I show up on findu.com.

The only problem seems to be the D7 ignoring the packet when the TNC is in APRS mode. This makes me think the D7 is expecting a different APRS data message syntax -- or maybe does not support this type of report.

Before I go into "try stuff until it works" mode I thought I would see if anyone knows if there is an FAQ or a compilation of D7 caveats and what the D7 does and does not support.

Thanks in advance.

-Mike, K5ATM

---

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---

## 8. [aprsspec] D7 problem with APRS tracker

From: "Antonio Sergio Sena" <[aserginho@hotmail.com](mailto:aserginho@hotmail.com)>  
Date: Wed, 08 Nov 2000 15:46:48 WET  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-118707-2000.11.08-09.56.55--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-118707-2000.11.08-09.56.55--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

>The only problem seems to be the D7 ignoring the packet when the TNC is in  
>APRS mode. This makes me think the D7 is expecting a different APRS data  
>message syntax -- or maybe does not support this type of report.  
>

Interesting...

The same is happening to me. I developed a WX APRS station, that you connect direct to the radio. Completely autonomous.  
The IGate's recognize, the users recognize, the D7 in TNC mode recognizes, but when you change the D7 to APRS it doesnt hear nothing.

I thought i was having any glitch with my code. Perhaps there are some bits swapped, that D7 doesnt recognize.

Interesting to know that finally someone stucked in the same problem.

Cheers!

73 de CT2GPW

---

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## 9. [aprrspec] Re: So what does a D7(a)g supportD7(a)g

From: Roger Barker <roger@peaksys.co.uk>  
Date: Wed, 8 Nov 2000 15:50:04 +0000  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-118708-2000.11.08-10.00.27--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-118698-2000.11.08-09.35.10--roger#peaksys.fsbusiness.co.uk@lists.tapr.org>, Pendley, Michael <mycall@sandia.gov> writes  
>The tracker I am developing seems to work -- but not with a D7(a)g in APRS  
>mode.  
Etc...

Could you post a sample of a frame from the tracker, as received on another system?

--  
Roger Barker, G4IDE - roger@peaksys.fsbusiness.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.fsbusiness.co.uk>

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---

## 10. [aprrspec] Re: So what does a D7(a)g supportD7(a)g

From: "Antonio Sergio Sena" <aserginho@hotmail.com>  
Date: Wed, 08 Nov 2000 15:57:48 WET  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-118709-2000.11.08-10.07.53--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>Could you post a sample of a frame from the tracker, as received on  
>another system?  
>

Hy!

I am sorry, but i cant.  
I am presently in Edinburgh, and all my stuff is in Portugal...  
If there is other thing i can provide??

Cheers!

73 de CT2GPW

\*\*\*\*\*  
Antonio Sergio Sena  
BEng Electrical & Electronic Engineering  
Heriot-Watt University - Edinburgh  
[www.qsl.net/ct2gpw](http://www.qsl.net/ct2gpw)

---

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---

## 11. [aprrspec] Re: So what does a D7(a)g support

From: "Pendley, Michael" <mycall@sandia.gov>  
Date: Wed, 8 Nov 2000 11:28:02 -0700  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-118726-2000.11.08-12.38.19--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

At work now but I will post a frame tomorrow morning.

Thanks for your interest.

-Mike

-----Original Message-----

From: Roger Barker [mailto:roger@peaksys.co.uk]  
Sent: November 08, 2000 8:50 AM  
To: APRS Spec Discussion List  
Subject: [aprsspec] Re: So what does a D7(a)g supportD7(a)g

In article <LYR13460-118698-2000.11.08-09.35.10--roger#peaksys.fsbusiness.co.uk@lists.tapr.org>, Pendley, Michael <mycall@sandia.gov> writes  
>The tracker I am developing seems to work -- but not with a D7(a)g in APRS  
>mode.  
Etc...

Could you post a sample of a frame from the tracker, as received on another system?

--  
Roger Barker, G4IDE - roger@peaksys.fsbusiness.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
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## 12. [aprsspec] Re: Invalid packet

From: "Rich Beckwith" <Rich@dps.state.mo.us>  
Date: Wed, 08 Nov 2000 14:59:53 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-118737-2000.11.08-15.10.19--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain  
>>> Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca> 11/08/00 09:25AM >>>

>Bruno wrote:  
>Just out of curiosity, what software are you writing ?

I am writing a windows based tracking/mapping program. The current windows based programs just don't work the way I would like them to, or have quirks that make them a pain to use. I figured I could spend my time griping, or write something I like.

Our local amateur radio club supports the annual MS-150 bike-a-thon (Multiple Sclerosis), SkyWarn, and other events and I wanted something better suited for "real time" asset tracking. I actually wrote a utility for one of the popular programs to refresh the screen every 3 seconds because we couldn't figure out which parameter or configuration setting to change to eliminate "vapor" trails. I wanted something that...

- Supported readily available maps in VECTOR based formats
- Movement in "real time", no vapor trails, object permanence is adjustable
- Map features, map layers and labels easily added or removed
- True 32 Bit Windows program with all the gadgets I normally expect; right click etc.

Because I don't have DOS memory constraints there are no significant limitations on the number of points or labels in a single DOS map. "Objects" move without leaving trails and the maps can be resized or zoomed easily. Additional label points can be added without a problem. Long way to go, but making progress...

Now if I could just come up with all those darn icons...

Regards,

Rich - Wn0x

P.S. The issue I had with the "cmd:cmd:cmd:cmd:" is that I wasn't checking for this possibility and my line parser was trying to treat it as an object.



---

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### 13. [aprsspec] RE: So what does a D7(a)g support

From: "Pendley, Michael" <mycall@sandia.gov>  
Date: Thu, 9 Nov 2000 08:10:26 -0700  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-118856-2000.11.09-09.22.35--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

So here is the output from my TNC:

K5ATM>SOTT10,WIDE3-3:!3505.52N\10628.95W\$000/000

I did a little "try stuff until it works" last night and found if I change the destination address (used as a software version number) from SOTT10 to something more familiar -- APS199 -- and the D7 was quite happy! I got a beep and my packet was entered on the message list.

Went back and looked at the protocol again and did not see any reason why a software version number of the form SOTT10 would be a bad idea. I did notice that all the software version number examples in the protocol document started with the letter "A" so I changed SOTT10 to AOTT10. The D7 still did not accept the packet in APRS mode.

So, it looks like the D7 is using information in the destination address to decide if a packet is a legal APRS packet -- and APS199 passes the test but SOTT10 does not. What am I missing?

Thanks for any help.

-Mike, K5ATM

-----Original Message-----

From: Bob Bruninga [mailto:bruninga@usna.edu]  
Sent: November 08, 2000 3:36 PM  
To: Pendley, Michael  
Subject: Re: [aprsspec] So what does a D7(a)g supportD7(a)g

Show us the packet and we can tell in a jiff.  
"a packet is worth a thousand words"...

bob

On Wed, 8 Nov 2000, Pendley, Michael wrote:

> The tracker I am developing seems to work -- but not with a D7(a)g in APRS  
> mode.  
>  
> The packet format is a simple "no timestamp lat/long position report"  
> (second page of chapter 8 -- page 32 of draft 1.0.1m) with course/speed in  
> the data extension.  
>  
> Packet transmission seems to be OK (i.e. bit timing, X-25 format, etc)  
since  
> the packet gets through the D7 just fine when the TNC is put in packet  
mode  
> and my local DIGI repeats the packet.  
>  
> The APRS data seems to be formatted correctly since APRS+SA is happy with  
> what comes out of the D7 (in packet mode) and I show up on findu.com.  
>  
> The only problem seems to be the D7 ignoring the packet when the TNC is in  
> APRS mode. This makes me think the D7 is expecting a different APRS data  
> message syntax -- or maybe does not support this type of report.  
>  
> Before I go into "try stuff until it works" mode I thought I would see if  
> anyone knows if there is an FAQ or a compilation of D7 caveats and what

the  
> D7 does and does not support.  
>  
> Thanks in advance.  
>  
> -Mike, K5ATM  
>  
>  
>  
> ---  
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> Questions regarding the SIG go to the SIG administrator: wallou@tapr.org  
>  
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org  
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060  
See DAYTON97 HISTORY: <http://web.usna.navy.mil/~bruninga/dayton.html>  
See Maryland APRS LIVE: <http://web.usna.navy.mil/~bruninga/aprs.html>  
See GPS on ANY radio: <http://www.tapr.org/tapr/html/mic-e.html>

---

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## 14. [aprsspec] WAP Jumpstart

From: Steve Dimse <sdimse@earthlink.net>  
Date: Thu, 9 Nov 2000 12:09:06 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-118867-2000.11.09-11.24.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Anyone with any experience with WAP or HDML3? I just got a sprint PCS and want to add support to findu, but the developers docs seem needlessly dense for my application. All I need to start is the markup for a simple text page.

Steve K4HG

---

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---

## 15. [aprsspec] RE: So what does a D7(a)g support

From: "James Jefferson" <jjeffers@deskmedia.com>  
Date: Thu, 9 Nov 2000 11:29:47 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: aprsspec@lists.tapr.org  
Message-ID: <LYR11589-118868-2000.11.09-11.40.44--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Mike,

I have noticed what you described too. I have found apk001 to work okay, I think. I would have expected Kenwood to fix this in the G version, but I guess they did not.

-James Jefferson KB0THN

> So here is the output from my TNC:  
>  
> K5ATM>SOTT10,WIDE3-3:!3505.52N\10628.95W\$000/000  
>  
> I did a little "try stuff until it works" last night and found if I change  
> the destination address (used as a software version number) from SOTT10

---

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## 16. [aprrspec] RE: So what does a D7(a)g support

From: Steve Dimse <sdimse@earthlink.net>  
Date: Thu, 9 Nov 2000 12:37:49 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-118869-2000.11.09-11.49.52--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 11/9/00 12:29 PM James Jefferson (jjeffers@deskmedia.com) wrote:

>I have noticed what you described too. I have found apk001 to work okay,  
>I think. I would have expected Kenwood to fix this in the G version, but  
>I guess they did not.  
>  
It isn't a bug, see page 23 of the spec, AP\* is a supported prefix, A\* is not...

Steve K4HG

---

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---

## 17. [aprrspec] RE: So what does a D7(a)g support

From: "Pendley, Michael" <mycall@sandia.gov>  
Date: Thu, 9 Nov 2000 11:34:38 -0700  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-118877-2000.11.09-12.45.03--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Steve, Bob -- thanks

In hindsight it all makes sense. For what it is worth, here is how I got lost. Maybe the info will be useful in a future version of the protocol document.

Chapter 4 describes the Destination address. The first section gives a list of 5 types of destination call signs. One is a generic APRS call sign (which are listed in the next section) and one is an APRS software version number. I read this as a list of independent categories -- not that some were subsets of the others. That is, I did not make the association that a software version number was a type of generic call sign -- specifically the AP\* generic call sign. I think, in fact, there are really 3 types of destination call signs -- Generic, Mic-E, and ALTNET with the caveat that Generic has three sub types -- with a symbol, without a symbol, and software version number.

This thinking was reinforced by the fact that there is a section on generic APRS callsigns and a separate section on APRS Software Version Numbers with no linkage between them. The fact that AP\* is the generic destination callsign used for software version numbers is implicit with the examples but an explicit statement to that effect would have saved me.

Finally, the section on Alternate Net Callsign states that any other callsign not included in the specific generic list or the other categories mentioned above may be used in Alternate Nets. When I read this I assumed that my SOTT10 call sign was not a generic APRS callsign but WAS one of the other categories mentioned above -- specifically a software version number. However, if I had stopped to think how one would implement a system it would have been obvious that it would be impossible to tell the difference between my interpretation of a software version number and an alternate net callsign.

So like I said, it all makes sense in hindsight and I appreciate the education. It seems like others have run into the same problem so I wonder if others followed the same path. If so, I would like to suggest that in some future release of the protocol spec that the use of AP\* be explicitly stated. This could be a short sentence below the table of generic callsigns where callsigns like DGPS are explicitly mentioned. Another possibility would be to add a sentence to the paragraph before the software version number examples -- i.e. add "The generic destination callsign AP\* is used to specify software version numbers" before the sentence "The following software version types are reserved ..."

I wonder if short descriptions of the other generic call signs should also be included. Some are obvious (at least to me) -- like WX\*. Others are not so obvious.

Thanks again

73

-Mike, K5ATM

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---

## 18. [aprsspec] RE: So what does a D7(a)g support

From: Bob Bruninga <[bruninga@usna.edu](mailto:bruninga@usna.edu)>  
Date: Thu, 9 Nov 2000 16:08:03 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-118886-2000.11.09-15.19.15--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> I have noticed what you described too. I have found apk001 to work okay,  
> I think. I would have expected Kenwood to fix this in the G version, but  
> I guess they did not.

It aint broke. The TO ADDRESS is limited to specific addresses according to the SPEC. Software version numbers beginning with AP are OK. Other callsigns beginnning with anything else are supposed to be ignored except for a few BEACON type exceptions.

bob

---

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---

## 19. [aprsspec] RE: So what does a D7(a)g support

From: "Brent Hildebrand" <[bhildebrand@earthlink.net](mailto:bhildebrand@earthlink.net)>  
Date: Thu, 9 Nov 2000 15:01:45 -0800  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-118899-2000.11.09-17.12.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

> > I have noticed what you described too. I have found apk001 to work okay,  
> > I think. I would have expected Kenwood to fix this in the G version, but  
> > I guess they did not.  
>  
> It aint broke. The TO ADDRESS is limited to specific addresses according  
> to the SPEC. Software version numbers beginning with AP are OK. Other  
> callsigns beginnning with anything else are supposed to be ignored except  
> for a few BEACON type exceptions.  
>  
> bob

Except that every Mic-E packet violates the ALTNET spec.

---

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## 20. [aprsspec] WAP available thru findu.com

From: Steve Dimse <[sdimse@earthlink.net](mailto:sdimse@earthlink.net)>  
Date: Thu, 9 Nov 2000 18:39:15 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-118902-2000.11.09-17.53.01--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

If you have a phone that does HDML 3.0, try this:

<http://www.findu.com/cgi-bin/wap.cgi/?k4hg-8>

I've tried this on my Motorola Star-Tac, and on a simulator for most of the WAP phones, but I'd love to hear reports of how your phone works.

Steve K4HG

— — —

**21. [aprsspec] Re: WAP available thru findu.com**

Done Steve,

73

>

— —

— — —

## 22. [aprsspec] ADMIN: Monthly Reminder

(This message is posted on the APRS SPEC SIG on a monthly basis.)

The purpose of the APRS SPEC SIG is to provide a forum for folks interested in discussing the APRS protocol specification.

To post messages to the APRS SPEC SIG, send email to [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)

The APRS SPEC SIG has a few simple rules:

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related to the APRS protocol specification (like "what kind of printer should I buy to print out my copy of the APRS specification?") may be considered off-topic. If you start a message with "this is off-topic..." then you are violating this rule.

- . Be succinct when composing a message. (The APRS SPEC SIG software has been optioned to limit the length of each message.)

- . When quoting a previous message, only quote the parts of that message you are referencing. (The APRS SPEC SIG software has been optioned to limit the length of a quote.)

- . Do not send messages in HTML or Rich Text format.

- . Do not send attachments.

- . Cross-posting is not permitted. (The APRS SPEC SIG software has been optioned to prevent cross-posting.)

- . The APRS SPEC SIG administrator reserves the right to suspend or ban any list member who violates these rules.

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To unsubscribe from the APRS SPEC SIG, follow the directions you will find at the bottom of each message you receive from the APRS SPEC.

#### QUESTIONS, COMMENTS, ETC.

If you have any questions, comments, etc. concerning the APRS SPEC, please email the APRS SPEC SIG administrator at the address below.

Stan Horzepa, WA1LOU, wallou@tapr.org

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## 23. [aprsspec] test - ignore

From: "Bill Reed" <transit\_man@my-deja.com>  
Date: Fri, 10 Nov 2000 12:46:45 -0800  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-119037-2000.11.10-14.56.56--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

ignore

-----  
--== Sent via Deja.com <http://www.deja.com/> ==--  
Before you buy.

---

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---

## 24. [aprsspec] Web Phone access to findu.com

From: Steve Dimse <sdimse@earthlink.net>  
Date: Mon, 13 Nov 2000 13:07:18 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-119507-2000.11.13-12.18.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In order to decrease the amount of (painful) text entry into the phones, I've set up a new virtual server strictly for WAP access, with a more direct URL. To access the find cgi:

wap.findu.com/find?k4hg-8

I have the weather cgi online as well now:

wap.findu.com/wx?k4hg

I plan on porting over all the findu cgis (at least those that make sense for phone access) eventually. Suggestions are welcome...

Steve K4HG

And as always, can someone forward this to the aprssig?

---

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## 25. [aprsspec] Icons? GPS Spec?

From: "Rich Beckwith" <Rich@dps.state.mo.us>  
Date: Mon, 13 Nov 2000 12:18:14 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-119508-2000.11.13-12.29.30--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

- Does anyone know if the icons for the symbol lists are available anywhere? I would rather not duplicate them if I don't have to, but don't want any copyright issues associated with "borrowing" them from existing APRS applications.

- Does anyone know where I can get documentation on the NMEA 0183 sentence specifications? I have the Mic-E, Positional and Compressed formats working, but need to add the \$G formats.

Thanks,

Rich Beckwith - Wn0x

---

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## 26. [aprsspec] RE: Icons? GPS Spec?

From: "Rich Beckwith" <Rich@dps.state.mo.us>  
Date: Mon, 13 Nov 2000 12:50:42 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-119519-2000.11.13-13.01.31--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

After reviewing a lot of logs, the "truck", "car", "jeep", "weather" and "digi" icons come up the most, but there are many more to go after that. Seems a waste of time to re-create them, especially since most folks are used to seeing a particular icon.

Thanks for the GPS info.

Rich - Wn0x

---

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## 27. [aprsspec] Re: Icons? GPS Spec?

From: "Curt Mills, WE7U" <hacker@tc.fluke.com>  
Date: Mon, 13 Nov 2000 11:06:44 -0800 (PST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-119521-2000.11.13-13.17.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Mon, 13 Nov 2000, Rich Beckwith wrote:

> - Does anyone know where I can get documentation on the NMEA 0183 sentence specifications? I have the Mic-E, Positional and Compressed formats working, but need to add the \$G formats.

Those are available in the spec, which costs money.  
As an alternative, a couple of us have figured out the formats of many of the sentences, and it is implemented in a Perl decoder program at:

<ftp://ftp.eskimo.com/u/a/archer/gps/gps.pl/>

The format of each sentence is easy to figure out from the Perl code. Each sentence has it's own section. The code is free (GPL'ed).

```
Curt Mills, WE7U                                     hacker.NO_*SPAM@tc.fluke.com
Senior Methods Engineer/SysAdmin
"Lotto:   A tax on people who are bad at math." -- unknown
"Windows: Microsoft's tax on computer illiterates." -- WE7U
```

## 28. [aprsspec] No Nmea data with Magellan 410&KenwoodThd7e

## 29. [aprsspec] What is WAP?

### 30. [aprsspec] Re: What is WAP?

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pages, but if you want to see what it looks like and don't have a WAP phone, you can download a development kit from phone.com (they make the wap gateways) for free which includes a simulator that runs under Windows or Solaris. Make sure you get the HDML 3 version, not the WML version if your goal is to see my pages.

Steve K4HG

---

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### 31. [aprsspec] Who release APRS Software Version Number?

From: "Marco Savegnago" <[msave@tin.it](mailto:msave@tin.it)>  
Date: Tue, 21 Nov 2000 3:36:48  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-120705-2000.11.21-03.56.11--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-120705-2000.11.21-03.56.11--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Hello, I'm the author of UIDIGI the APRS digipeater firmware for TNC2. Actually I'm using as software version number the experimental destination APZxxx.  
Now that the code has overcome the experimental phase, is considered stable and is used from several digipeater sysop around the world I want to obtain a reserved APRS Software Version Number for it.

Whoever knows who release these numbers?

Thank you in advance.

Marco IW3FQG

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---

### 32. [aprsspec] findu.com web entry

From: Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Wed, 29 Nov 2000 18:10:31 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-122101-2000.11.29-17.23.06--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-122101-2000.11.29-17.23.06--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

People have been asking for the ability to enter positions directly via the web. I have resisted, because of the need to manually maintain user accounts. I have now created an automatic system to do the admin, and a cgi to do the data entry. I'd like to put it out for beta test to the people on this list before I open it up to the general community.

You can read more about it and request an account at:

<http://www.findu.com/account.html>

and more about how to enter positions once an account is active at:

<http://www.findu.com/input.html>

Comments welcome...

Steve K4HG

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### 33. [aprsspec] Re: findu.com web entry

From: Carl Littlejohns <[carl\\_mail@dr.com](mailto:carl_mail@dr.com)>  
Date: Thu, 30 Nov 2000 01:42:53 GMT  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-122111-2000.11.29-19.56.27--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-122111-2000.11.29-19.56.27--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I assume there is no direct relationship between findu and [www.aprs.com](http://www.aprs.com) which give the same visual display.

Carl GW0TQM

---

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### 34. [aprsspec] Re: findu.com web entry

From: Carl Littlejohns <[carl\\_mail@dr.com](mailto:carl_mail@dr.com)>  
Date: Thu, 30 Nov 2000 01:42:51 GMT  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: [aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)  
Message-ID: <[LYR11589-122112-2000.11.29-19.59.11--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-122112-2000.11.29-19.59.11--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Seems to work well - although clicking the top map gives you a very detailed position plot that really means that position ambiguity is a good idea.... even my local village road showed up with the cinks in the right places!

Now - what would be MOST useful IMO would be for the database to be updatable with a simple email. I can send emails from my 9110 wherever I am - much more easily than firing up a web-browser.

Just a thought.

Carl.  
GW0TQM

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### 35. [aprsspec] Re: findu.com web entry

From: Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Wed, 29 Nov 2000 20:51:44 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-122114-2000.11.29-20.04.06--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-122114-2000.11.29-20.04.06--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 11/29/00 8:42 PM Carl Littlejohns ([carl\\_mail@dr.com](mailto:carl_mail@dr.com)) wrote:

>Seems to work well - although clicking the top map gives you a very detailed  
>position plot that really means that position ambiguity is a good idea....  
>even my local village road showed up with the cinks in the right places!  
>  
>Now - what would be MOST useful IMO would be for the database to be updatable  
>with a simple email. I can send emails from my 9110 wherever I am - much  
>more  
>easily than firing up a web-browser.  
>  
Already in the works...

Steve K4HG

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---

### 36. [aprsspec] Re: findu.com web entry

From: Steve Dimse <[sdimse@netrox.net](mailto:sdimse@netrox.net)>  
Date: Wed, 29 Nov 2000 20:51:53 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-122115-2000.11.29-20.04.56--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-122115-2000.11.29-20.04.56--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On 11/29/00 8:42 PM Carl Littlejohns ([carl\\_mail@dr.com](mailto:carl_mail@dr.com)) wrote:

>I assume there is no direct relationship between findu and [www.aprs.com](http://www.aprs.com) which  
>give the same visual display.  
>  
aprs.com is a Canadian relocation service. If you mean [aprs.net](http://aprs.net), findu is a client of APRServe/aprsd, there is no link in the other direction.

Steve K4HG

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# December 2000

Original source file: aprsspec.0012

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/aprssid/aprssid/mail\\_archive/aprssid.0012](http://ftp.tapr.org/tapr_history/SIG_Archives/aprssid/aprssid/mail_archive/aprssid.0012)

## 1. [aprssid] Query: Area Objects

From: "Dale Huguley" <kg5qd@earthlink.net>  
Date: Sun, 3 Dec 2000 12:19:56 -0000  
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>  
Message-ID: <LYR11589-122592-2000.12.03-06.32.02--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All-

I am in the process of formulating a proposed extension to the protocol for mult-point lines- and I cannot resolve something in the present spec. In Chapter 11 (page 60) regarding "Area Objects" the text states

"any size from 60 feet to 100 miles".

the offset is then defined as a two digit number representing the square root of the offset in hundredths of a degree. The smallest offset (besides zero) would therefore be "01"- which my math is:

$01^2 = 1 = .01 \text{ degree} = .68703 \text{ miles}$  if we were talking about longitude at the equator = 3627 ft

Largest offset would be :

$99^2 = 9801 = 98.01 \text{ degrees} = 6732 \text{ miles}$  at the equator

I must be misinterpreting the spec.

73 de kg5qd Dale

---

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

## 2. [aprssid] Multiline Protocol Proposal Part one

From: "Dale Huguley" <kg5qd@earthlink.net>  
Date: Sun, 3 Dec 2000 14:56:10 -0000  
To: "APRS Spec Discussion List" <aprssid@lists.tapr.org>  
Message-ID: <LYR11589-122620-2000.12.03-09.08.16--lyris.aprssid#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hi All-

This proposal is an outgrowth of my need for random multipoint line and polygon output of NWS watches and warnings. After my small talk at this years DCC where there was some discussion of this need, I sat down next to Bill Diaz who suggested making the offsets positive and negative and divorcing it from the position of the label- which solved a lot of the problems I was having thinking of a viable spec. So here goes-

(I will be refering to the Chapter 11 page 60 and 61 a lot- this will make more sense if you have a copy handy)

The present spec for area objects has enough room left in it to use the lower case "L" for the symbol. The present spec for the "T" (type) only defines 0 through 9 - leaving everything else available for other types of objects. These could be multipoint lines, polygons, singular points etc. to be defined later.

The next character would be a "feature" character which would be how to display the object (if possible). This would consist of color, filled area, and flashing etc. and would be dependant on the display software's ability.

Next would come the "Scale" character. This hung me up for 2 weeks trying to come up with a scheme that was versatile and nailed the two scales I need the most- hundredths of a degree and tenths of a degree. The NWS uses hundredths for the "Area of Maximum Concern" output for tornados, severe thunderstorms ect. and tenths for watch boxes issued by the Severe Storms Forecast Center. It would be also useful to be able to generate a small scale map "on the fly" for something like a 10k walk or a bikeathon--- on the other end of the scale it would be nice to plot the ground track of A0-40 while it was at apogee. So the smallest is a ten-thousandth of a

degree - around 10 yards or meters. Largest is about 200 miles. This is the smallest offset from the reference point for a given scale factor.

the scale is defined as  $\text{scale character} = (\text{integer}(\log \text{ to base } 10 \text{ of the scale factor relative to } .0001 \text{ degree}) \times 20) + 33$

Example: tenths of a degree would be -- scale factor = 1000 or  $(.0001 \times 1000 = .1 \text{ degree})$

$\log \text{ to base } 10 \text{ of } 1000 \text{ is } 3$

$3 \times 20 = 60$

transmitted character would be  $60 + 33$  or  $\text{ascii } 93 = "]"$

This means that  $.0001 \text{ degree} = "!"$   $.001 \text{ degree} = "5"$   $.01 \text{ degree} =$

$"I"$   $.1 \text{ degree} = "]"$  and  $1 \text{ degree} = "q"$

Top of the scale would be "{" which I am loath to transmit since it

generally means a message number follows-

so probably limit the scale to "z" =  $\text{ascii } 122$   $(122-33) = 89$   $89/20 = 4.45$

which is  $\log$  for 28,183 or a scale factor of 2.81 degrees or about 200 miles

end of part one

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---

### 3. [aprsspec] Multi Point Protocol Part Two

From: "Dale Huguley" <[kg5qd@earthlink.net](mailto:kg5qd@earthlink.net)>

Date: Sun, 3 Dec 2000 15:47:42 -0000

To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <[LYR11589-122630-2000.12.03-09.59.19--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-122630-2000.12.03-09.59.19--lyris.aprsspec#tapr.org@lists.tapr.org)>

Rendered body type: text/plain

(Just noticed I miss-named the first part of this message "Multiline" instead of "multi-point")

Now that we are all confused- lets procede:

Following the "Type" "Feature" and "Scale" characters comes a string of two character offset sets

Each set consists of a latitude and a longitude offset character such that

Offset character =  $(\text{integer}(\text{offset in degrees} / \text{scale factor})) + 78$

Range is limited to 44 scale factors plus and minus from the reference for a given scale.

Upper case "N" =  $\text{ascii } 78$  which would mean zero offset

Lower Case "z" =  $\text{ascii } 122 = +44$  scale factors  $(122 - 78 = 44)$

Double Quote " " =  $\text{ascii } 34 = -44$  scale factors  $(34 - 78 = -44)$

Since we have a two character scheme for offsets and there are anywhere from 39 to 46 characters left before the string gets too long for the network- that means the object can have as many as 20 to 23 points (a small map!) Remember that the points may be ends of lines, corners of polygons, or simply points - and that they can all be offset from the reference point contained in the preceding part of the packet (either compressed or full position report ) This means that the position report can be the label for the set of objects - the label will display on all present software without the multi-point stuff.

Uses for this protocol I can think of:

NWS boxes and odd-polygons

Last 20 lightning strikes

On the fly Maps

Routes

Extremely low resolution radar (!)

I will try to generate some example packets this week-end

73 de kg5qd Dale

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---

#### 4. [aprsspec] Re: Query: Area Objects

From: Bob Bruninga <[bruninga@usna.edu](mailto:bruninga@usna.edu)>  
Date: Sun, 3 Dec 2000 12:41:18 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-122640-2000.12.03-11.52.47--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Sun, 3 Dec 2000, Dale Huguley wrote:

> the offset is then defined as a two digit number representing the square  
> root of the offset in hundreths of a degree. The smallest offset (besides  
> zero) would therefore be "01"- which my math is:  
>  
>  $01^2 = 1 = .01$  degree = .68703 miles if we were talking about longitude at  
> the equator = 3627 ft

I just did the objects in APRSdos and

01 made a rectangle 150' by 200'  
02 made it 700 by 950  
03 made it .31 miles by .4 miles

I dont have time to check the details, supposed to be raking leaves...

bo

---

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---

#### 5. [aprsspec] "Printable ASCII Characters"?

From: Roger Barker <[roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)>  
Date: Tue, 5 Dec 2000 12:53:24 +0000  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-122932-2000.12.05-07.05.04--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

The APRS spec frequently refers to "printable ASCII characters". I presume that it is using the term with its normal meaning of ASCII character codes 32 to 126? If it is, then strict adherence to the spec for the content of beacon comments, messages, object names, etc, would seem to present a problem for users whose native language makes use of accented characters.

--

Roger Barker, G4IDE - [roger@peaksys.co.uk](mailto:roger@peaksys.co.uk)  
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For WinPack go to - <http://www.peaksys.co.uk>

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---

#### 6. [aprsspec] Re: "Printable ASCII Characters"?

From: Bob Bruninga <[bruninga@usna.edu](mailto:bruninga@usna.edu)>  
Date: Tue, 5 Dec 2000 10:39:44 -0500 (EST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Cc: APRS Spec Discussion List <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <LYR11589-122952-2000.12.05-09.54.08--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 5 Dec 2000, Roger Barker wrote:

> The APRS spec frequently refers to "printable ASCII characters". I  
> presume that it is using the term with its normal meaning of ASCII  
> character codes 32 to 126? If it is, then strict adherence to the spec  
> for the content of beacon comments, messages, object names, etc, would  
> seem to present a problem for users whose native language makes use of  
> accented characters.

An interesting observation. The thing we were trying to avoid was

imbedded TABS and Line feeds and FORM Feeds and other control characters. I think that most TNC's operate at n,8 1 and so it wouldn't matter. It would be nice to test against conventional TNC's and quantify the problem (if any)....

Bob

---

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---

## 7. [aprsspec] RE: "Printable ASCII Characters"?

From: "Woodrick, Ed" <ewoodrick@ed-com.com>  
Date: Tue, 5 Dec 2000 10:57:06 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-122955-2000.12.05-10.09.06--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Roger,

"printable ASCII characters" isn't what causes a problem. ASCII in general is what causes the problems. Being an "American" standard, ASCII was designed to use a small number of bits to represent the English Alphabet. And that doesn't even come close to what is needed to represent the characters of other languages. That's why Unicode was created. 16 bit representations of alphabets from across the world.

If you think that using one of the above 128 characters is a solution, then it's only a solution in the narrow realm that the creators of ASCII thought in. Dependent on the character set that you are using, the characters can have a wide variety of displays. And if I'm not mistaken, APRS doesn't attempt to use character sets.

So yes, my take is that you are absolutely correct. The option is to implement character sets and Unicode which would double the packet lengths.

Wanna try Kanji?

I'll agree that it was a very self-centered attitude that create ASCII and the same attitude that has continued it's use. But it's also an attitude that has allowed us to reduce by 50% the transmission time and storage requirements.

Ed Woodrick

-----Original Message-----

From: Roger Barker [mailto:roger@peaksys.co.uk]  
Posted At: Tuesday, December 05, 2000 7:53 AM  
Posted To: Mail-Lists.APRS  
Conversation: [aprsspec] "Printable ASCII Characters"?  
Subject: [aprsspec] "Printable ASCII Characters"?

The APRS spec frequently refers to "printable ASCII characters". I presume that it is using the term with its normal meaning of ASCII character codes 32 to 126? If it is, then strict adherence to the spec for the content of beacon comments, messages, object names, etc, would seem to present a problem for users whose native language makes use of accented characters.

--

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## 8. [aprsspec] Re: "Printable ASCII Characters"?

From: David VanHorn <dvanhorn@cedar.net>  
Date: Tue, 05 Dec 2000 11:34:52 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-122962-2000.12.05-10.52.07--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

>An interesting observation. The thing we were trying to avoid was  
>imbedded TABS and Line feeds and FORM Feeds and other control characters.  
>I think that most TNC's operate at n,8 1 and so it wouldn't matter. It  
>would be nice to test against conventional TNC's and quantify the problem  
>(if any)....

I've often wondered at the reluctance to use the lower end of the ascii  
set, with it's standardized chars for various packet structure elements.  
That's what they are there for.

--  
Where's dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

---  
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---

## 9. [aprsspec] RE: "Printable ASCII Characters"?

From: Roger Barker <roger@peaksys.co.uk>  
Date: Tue, 5 Dec 2000 17:03:31 +0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-122966-2000.12.05-11.15.45--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-122955-2000.12.05-10.09.06--roger#peaksys.co.uk@lists.tapr.org>, Woodrick, Ed <ewoodrick@ed-com.com> writes

[snip]

> So yes, my take is that you are absolutely correct. The option is  
> to implement character sets and Unicode which would double the  
> packet lengths.  
>  
> Wanna try Kanji?  
>  
> I'll agree that it was a very self-centered attitude that create  
> ASCII and the same attitude that has continued it's use. But it's  
> also an attitude that has allowed us to reduce by 50% the  
> transmission time and storage requirements.

Unicode is a quantum leap from "printable ASCII"! All I was really  
asking was whether "extended ASCII" - character codes above 127 - should  
be allowed in APRS messages, etc. After all, it's been done on "normal"  
(mailbox) packet for many years. Transmission and storage requirements  
would be exactly the same as now.

--  
Roger Barker, G4IDE - roger@peaksys.co.uk  
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## 10. [aprsspec] RE: "Printable ASCII Characters"?

From: "Woodrick, Ed" <ewoodrick@ed-com.com>  
Date: Tue, 5 Dec 2000 12:20:19 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-122969-2000.12.05-11.32.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

My point is that there really is no such standard as "extended ASCII"  
What might print as one character for you isn't the same for someone  
else. It depends on the character set that you are using.

-----Original Message-----  
From: Roger Barker [mailto:roger@peaksys.co.uk]  
Posted At: Tuesday, December 05, 2000 12:04 PM  
Posted To: Mail-Lists.APRS



Conversation: [aprsspec] RE: "Printable ASCII Characters"?  
Subject: [aprsspec] RE: "Printable ASCII Characters"?

In article <LYR13460-122955-2000.12.05-10.09.06--roger#peaksys.co.uk@lists.tapradio.org>, Woodricken, Ed <ewoodricken@ed-com.com> writes  
[snip]

> So yes, my take is that you are absolutely correct. The option is  
> to implement character sets and Unicode which would double the  
> packet lengths.  
>  
> Wanna try Kanji?  
>  
> I'll agree that it was a very self-centered attitude that create  
> ASCII and the same attitude that has continued it's use. But it's  
> also an attitude that has allowed us to reduce by 50% the  
> transmission time and storage requirements.

Unicode is a quantum leap from "printable ASCII"! All I was really asking was whether "extended ASCII" - character codes above 127 - should be allowed in APRS messages, etc. After all, it's been done on "normal" (mailbox) packet for many years. Transmission and storage requirements would be exactly the same as now.

--  
Roger Barker, G4IDE - roger@peaksys.co.uk  
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## 11. [aprsspec] Position reports w/ speed/course

From: Joel Maslak <jmaslak@antelope.net>  
Date: Tue, 5 Dec 2000 09:53:27 -0700 (MST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapradio.org>  
Message-ID: <LYR11589-122971-2000.12.05-11.55.48--lyris.aprsspec#tapradio.org@lists.tapradio.org>  
Rendered body type: text/plain

I am having difficulty getting basic position reports with course/speed to work in my application. I have read the (very well done) APRS spec, and I \*THINK\* I'm implementing the spec. However, my code does not seem to be working.

Here's a packet that I received at my home station:  
N7XUC-2>APZPAD,WIDE2-2:/232352z4118.39N/10534.56W>122/000SmartPalm Beta

The "SmartPalm Beta" is supposed to be a comment. However, Xastir and findu both treat the 122/000 as a comment, too. The 122/000 is supposed to be a course of 122 degrees at 000 nm/h.

My question is simple:  
Did I do this right? If not, what is wrong?

--  
Joel Maslak  
N7XUC

P.S. In case you are wondering, I'm implementing a clone to the HamHud on the Palm. A very simple display, like the HamHud. It won't be a replacement for PalmAPRS, as it will not include mapping, nor will it replace the HamHud, as the HamHud is a nicer and cheaper package for a vehicle.

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---

## 12. [aprsspec] RE: "Printable ASCII Characters"?

From: Roger Barker <roger@peaksys.co.uk>  
Date: Tue, 5 Dec 2000 17:41:20 +0000

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-122972-2000.12.05-11.56.02--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

In article <LYR13460-122969-2000.12.05-11.32.12--roger#peaksys.co.uk@lists.tapr.org>, Woodrick, Ed <ewoodrick@ed-com.com> writes

>  
> My point is that there really is no such standard as "extended  
> ASCII" What might print as one character for you isn't the same for  
> someone else. It depends on the character set that you are using.

Yes, it isn't perfect. But it works well enough to be widely used on "normal" packet. You only get real problems with Windows software that uses the standard Windows ANSI character set, but that, of course, is a problem for the developer...

--

Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

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---

### 13. [aprsspec] Re: Position reports w/ speed/course

From: Bob Bruninga <bruninga@usna.edu>  
Date: Tue, 5 Dec 2000 13:13:25 -0500 (EST)  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Cc: APRS Spec Discussion List <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-122982-2000.12.05-12.26.40--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 5 Dec 2000, Joel Maslak wrote:

> N7XUC-2>APZPAD,WIDE2-2:/232352z4118.39N/10534.56W>122/000SmartPalm Beta  
>  
> The "SmartPalm Beta" is supposed to be a comment. However, Xastir and  
> findu both treat the 122/000 as a comment, too. The 122/000 is supposed  
> to be a course of 122 degrees at 000 nm/h.  
> Did I do this right? If not, what is wrong?

k

Looks OK to me. Usually in such cases, I insert a "/" between the end of the SPEED and the beginning of the comment to make it more readable. Maybe that "/" got into the spec or into Xaster and FINDU?

bob

--

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### 14. [aprsspec] RE: Position reports w/ speed/course

From: "Jonathan Bradshaw" <Jonathan@NrgUp.Net>  
Date: Tue, 5 Dec 2000 21:11:43 -0000  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-123014-2000.12.05-15.22.59--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

Hmm, seems ok to me. A quick pass through the decoder I'm working on seems to be able to decode it too.

```
<?xml version="1.0"?>
<station>
  <callsign>N7XUC-2</callsign>
  <messaging>>false</messaging>
  <position>
    <type>uncompressed</type>
    <latitude>41.3065</latitude>
    <longitude>-105.576</longitude>
    <ambiguity>0</ambiguity>
    <symbolTable>primary</symbolTable>
    <symbolCode id=30>Car</symbolCode>
    <course>122</course>
```

```
<speed>0</speed>
<timeReported>2000-12-05T21:03:33Z</timeReported>
</position>
<comment>SmartPalm Beta</comment>
</station>
```

Lets see what aprsdec thinks:

```
N7XUC-2>APZPAD,WIDE2-2:/232352z4118.39N/10534.56W>122/000SmartPalm Beta
APRS Data Type= Posit w/ time. No APRS
Day= 23 Time= 23 hours 52 mins UTC
Lat= 41 deg 18.39 min N Long= 105 deg 34.56 min W
Icon= Car Overlay= (none)
Course= 122 deg Speed= 000 knots (0.0 mph 0.0 kph 0.0 m/s)
```

Looks good!

--

"The only secure computer is one that's unplugged, locked in a safe, and buried 20 feet under the ground in a secret location... and I'm not even too sure about that one" -- Dennis Huges, FBI.

-----Original Message-----

From: bounce-aprsspec-14840@lists.tapr.org  
[mailto:bounce-aprsspec-14840@lists.tapr.org]On Behalf Of Joel Maslak  
Sent: 05 December 2000 16:53  
To: APRS Spec Discussion List  
Subject: [aprsspec] Position reports w/ speed/course

I am having difficulty getting basic position reports with course/speed to work in my application. I have read the (very well done) APRS spec, and I \*THINK\* I'm implementing the spec. However, my code does not seem to be working.

Here's a packet that I received at my home station:  
N7XUC-2>APZPAD,WIDE2-2:/232352z4118.39N/10534.56W>122/000SmartPalm Beta

The "SmartPalm Beta" is supposed to be a comment. However, Xastir and findu both treat the 122/000 as a comment, too. The 122/000 is supposed to be a course of 122 degrees at 000 nm/h.

My question is simple:  
Did I do this right? If not, what is wrong?

--

Joel Maslak  
N7XUC

P.S. In case you are wondering, I'm implementing a clone to the HamHud on the Palm. A very simple display, like the HamHud. It won't be a replacement for PalmAPRS, as it will not include mapping, nor will it replace the HamHud, as the HamHud is a nicer and cheaper package for a vehicle.

---

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## 15. [aprsspec] RE: "Printable ASCII Characters"?

From: Paul Keinanen <keinanen@sci.fi>  
Date: Wed, 06 Dec 2000 21:00:22 +0200  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-123194-2000.12.06-13.12.12--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On Tue, 5 Dec 2000 17:03:31 +0000, Roger Barker <roger@peaksys.co.uk> wrote:

>In article <LYR13460-122955-2000.12.05-10.09.06--roger#peaksys.co.uk@lists.tappr.org>, Woodrick, Ed <ewoodrick@ed-com.com> writes  
,

>> So yes, my take is that you are absolutely correct. The option is  
>> to implement character sets and Unicode which would double the  
>> packet lengths.

>> Wanna try Kanji?

>> I'll agree that it was a very self-centered attitude that create  
>> ASCII and the same attitude that has continued it's use. But it's  
>> also an attitude that has allowed us to reduce by 50% the  
>> transmission time and storage requirements.

>Unicode is a quantum leap from "printable ASCII"! All I was really  
>asking was whether "extended ASCII" - character codes above 127 - should  
>be allowed in APRS messages, etc. After all, it's been done on "normal"  
>(mailbox) packet for many years. Transmission and storage requirements  
>would be exactly the same as now.

While Unicode would definitively the way to make the APRS standard more international, why use the fixed width 16 bit UTF-16 characters. Use the variable length UTF-8 instead.

In UTF-8 all 7 bit US-ASCII characters are encoded as a single byte. In fact you can not tell from the byte stream if you have pure US-ASCII or UTF-8.

All extended Latin, Greek, Cyrillic, Hebrew, Arabic etc. characters are encoded by two bytes/char.

East Asian characters are encoded by 3 bytes/char and in the future, dead languages, such as Hieroglyphic will be encoded with 4 bytes/char.

In the US-ASCII range 0 .. 127, the high bit is cleared. In all other bytes, the high bit is set (in both the lead byte and the follow up bytes), thus, there is no risk for an extended character byte to be incorrectly interpreted as CR, TAB, XON, XOFF etc. in any PC to TNC interfaces or some internet gateways relaying on some strange Telnet libraries.

However, the 8th bit must be properly handled end to end, but if there still are equipment that do not support 8 bit characters, they deserve the same fate as dinosaurs.

Paul OH3LWR

---

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---

## 16. [aprsspec] RE: "Printable ASCII Characters"?

From: "Richard Carter" <rich.carter@windriver.com>  
Date: Wed, 6 Dec 2000 16:20:14 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tappr.org>  
Message-ID: <LYR11589-123206-2000.12.06-15.27.57--lyris.aprsspec#tappr.org@lists.tappr.org>  
Rendered body type: text/plain

CW doesn't support international character sets. Why should APRS?

Rich Carter - KE1EV

-----Original Message-----

From: bounce-aprsspec-13907@lists.tappr.org  
[mailto:bounce-aprsspec-13907@lists.tappr.org]On Behalf Of Paul Keinanen  
Sent: Wednesday, December 06, 2000 2:00 PM  
To: APRS Spec Discussion List  
Subject: [aprsspec] RE: "Printable ASCII Characters"?

On Tue, 5 Dec 2000 17:03:31 +0000, Roger Barker <roger@peaksys.co.uk> wrote:

>In article <LYR13460-122955-2000.12.05-10.09.06--roger#peaksys.co.uk@lists.tapir.org>, Woodrck, Ed <ewoodrick@ed-com.com> writes  
,

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>> Wanna try Kanji?

>> I'll agree that it was a very self-centered attitude that create  
>> ASCII and the same attitude that has continued it's use. But it's  
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In fact you can not tell from the byte stream if you have pure  
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East Asian characters are encoded by 3 bytes/char and in the future,  
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libraries.

However, the 8th bit must be properly handled end to end, but if there  
still are equipment that do not support 8 bit characters, they deserve  
the same fate as dinosaurs.

Paul OH3LWR

---

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---

## 17. [aprsspec] RE: "Printable ASCII Characters"?

From: "Woodrck, Ed" <ewoodrick@ed-com.com>  
Date: Wed, 6 Dec 2000 16:32:55 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-123215-2000.12.06-15.44.18--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

What if CW didn't include an "a" or an "e"? Wouldn't that make it really  
hard to spell a lot of words? Since American English doesn't make up  
100% of the languages spoken on this planet, a LOT of people have  
problems. How would you like to not be able to spell your name in CW or  
packet? Or maybe not write your city's name? There are many situations  
where this exists.

A lot of the world is pretty upset with the "Americanizing" that goes on. It was bad enough that we changed the spelling of thousands of family names as they came through Ellis Island, we don't have to continue the practice.

Why should APRS (or any transcribed communications) support International Character Sets? Because the great majority of names and words used around the world can't be represented in US ASCII.

While we Americans might think that we are the focal point of the world, reality is far from it.

How would you like it if Kanji was the only character set supported by APRS?

I'm not saying that APRS should be modified to support non-ASCII. Overall, that would be extremely tough. But then again, any new specifications should at least attempt to start addressing the issues. Non-ASCII is actually pretty tough when you factor in the transport that is used. Email systems, using similar transports, often do a compression to 6 bit characters for transmission of the data. Because there are still some transports that have problems with 8 and even 7 bit characters.

Ed Woodrick

-----Original Message-----

From: Richard Carter [mailto:rich.carter@windriver.com]

Posted At: Wednesday, December 06, 2000 4:20 PM

Posted To: Mail-Lists.APRS

Conversation: [aprsspec] RE: "Printable ASCII Characters"?

Subject: [aprsspec] RE: "Printable ASCII Characters"?

CW doesn't support international character sets. Why should APRS?

Rich Carter - KE1EV

---

## 18. [aprsspec] RE: "Printable ASCII Characters"?

From: Paul Keinanen <keinanen@sci.fi>

Date: Thu, 07 Dec 2000 02:11:10 +0200

To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>

Message-ID: <LYR11589-123238-2000.12.06-18.22.12--lyris.aprsspec#tapir.org@lists.tapir.org>

Rendered body type: text/plain

On Wed, 6 Dec 2000 16:32:55 -0500, "Woodrick, Ed"

<ewoodrick@ed-com.com> wrote:

>is used. Email systems, using similar transports, often do a compression  
>to 6 bit characters for transmission of the data. Because there are  
>still some transports that have problems with 8 and even 7 bit  
>characters.

A decade ago there were a lot of problems getting 8 bit characters through some mail gateways, but fortunately there was a lot of security bugs in these systems, so these had to be updated and with the new versions, the 8 bit support sneaked in also :-). So anybody complaining that the 8 bit characters will not get through, also announce that they have a system full of security bugs.

A haven't seen 6 bit character sets since 36 bit mainframes (Univac etc.), but these usually had also a 9 bit character mode. DECsystem20 had five 7 bit characters packed into a single 36 memory word. Apart for these few exceptions, I can not think of architectures that could not handle effectively 8 bit characters.

The reason for 6 bit encoding of \_binary\_ data is that many gateways are written in C and which the NULL is the string terminator, thus any actual NULLs in the message would be lost.

Returning back to APRS, there are several ways in which non-US-ASCII characters could be used.

There is the old 7 bit ISO-646 standard with dozens of national variants. Some code points in the US-ASCII ([ ] { } \ | etc.) are replaced with national variants. A code page usually only supports one or two

languages, thus, some means would be required to communicate the code page in use when sending a message from one country to an other. This was the method used in computing until the early 1980's. Unless the code page number is contained in the same message, there is going to be a lot of incorrectly displayed text. We would end up with the same mess as back in the 1970's and 1980's. I have written bilingual Finnish/Russian and English/Arabic applications using 7 bit code pages and I do not want to experience the same mess again with frequent code page switching.

If non-Latin 7 bit code pages are in use, you can not display the Latin letters A .. Z at the same time.

However, if 8 bit characters are supported, then some variant of ISO-8859 could be used, each supporting a large number of languages. But then again, the code page number would have to be transmitted in the message going from one language group to an other.

UTF-8 also requires an 8 bit transport, but the advantage is that there is no need to communicate the code page in the message, since each character has a unique code all over the world. For English, the code is as effective as US-ASCII, for languages using some form of the Latin script, the size is about 10 .. 20 % larger than ISO-8859. For scripts like Greek, Cyrillic, Hebrew and Arabic, the size is twice as large compared to the appropriate ISO-8859 variant.

Paul OH3LWR

---

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---

## 19. [aprsspec] RE: "Printable ASCII Characters"?

From: Paul Keinanen <[keinanen@sci.fi](mailto:keinanen@sci.fi)>  
Date: Thu, 07 Dec 2000 02:11:09 +0200  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-123239-2000.12.06-18.23.15--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-123239-2000.12.06-18.23.15--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

On Wed, 6 Dec 2000 16:20:14 -0500, "Richard Carter"  
<[rich.carter@windriver.com](mailto:rich.carter@windriver.com)> wrote:

>CW doesn't support international character sets. Why should APRS?

In the Finnish amateur radio CW exam, the characters Ä (di dah di dah) and Ö (dah dah dah di) are required. Also Å (di dah dah di dah) is used in communication but not required in the exam.

Even the ARRL Handbook list quite a few international characters, so it should not be too hard even for Americans to know that other character sets exists. Older Handbooks (e.g. 1991) even listed Japanese, Thai, Korean, Arabic, Hebrew, Russian and Greek Morse codes.

Paul OH3LWR

---

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---

## 20. [aprsspec] Current software & the spec

From: Joel Maslak <[jmaslak@antelope.net](mailto:jmaslak@antelope.net)>  
Date: Sun, 10 Dec 2000 10:34:14 -0700 (MST)  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-123941-2000.12.10-11.44.03--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-123941-2000.12.10-11.44.03--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I am writting a small tracker/display application, and came across a few things which made me scratch my head. Simply put, there are some things in the spec which are not implemented by even the most popular APRS programs. There are other things which, while implemented, are implemented slightly different then the spec.

Someone who works in the computer industry will immediately say, "this isn't unusual!" It's not, as there are many, many different TCP implementations, and I know of none that follow the actual TCP/IP

spec! However, the spec was written for a reason, and any software designer should try to follow it whenever possible.

Here's a short list of inconsistencies I've found:

- 1) Some packets end with a CR. This is part of the actual packet, not a fault of my system! This is due to the SENDPAC character being a LF - when programs send a CRLF instead of just a LF, the CR becomes part of the packet. The spec indicates that the trailing CR should NOT exist.
- 2) Other programs send BOTH a CR and LF! This is most common in "dumb" trackers. Chances are, it is a bug in the TNC firmware. Once again, this is outside the spec.
- 3) The Course/Speed extension simply does not work in most software. I've actually tested WinAPRS, Findu, and Xastir, although I'm sure it doesn't work in most others, either. This extension is treated like part of the comment by these systems. Thus, the longer \$GPRMC string needs to be sent if this information is important to you.
- 4) Compressed packets are not understood by many simple applications. This causes our bandwidth usage to increase.

Let me recommend, as always, that any software is liberal in what it accepts and conservative in what it sends. If your software does one of the above, you would be doing the APRS community a service by fixing it! However, any author should expect the above things to occur. A simple reading of the spec will not alert you to these possibilities.

--  
Joel Maslak  
N7XUC

---  
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---

## 21. [aprsspec] Re: Current software & the spec

From: David VanHorn <[dvanhorn@cedar.net](mailto:dvanhorn@cedar.net)>  
Date: Sun, 10 Dec 2000 13:05:04 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-123942-2000.12.10-12.19.44--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-123942-2000.12.10-12.19.44--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

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>the above, you would be doing the APRS community a service by fixing  
>it! However, any author should expect the above things to occur. A  
>simple reading of the spec will not alert you to these possibilities.

Are we doing ourselves any good by accepting packets that don't conform to spec?  
I think it mainly prolongs the agony.

I used to work on software that moved money around. (Credit card payments)  
We used an approach that could be summarized as "take the first opportunity to throw the packet away, and if it survives all tests, then act on it".

We had almost zero instances of crashes caused by bad packets.  
The one time we had a problem, it turned out to be a bug on our end, aggravated by an LRC routine that worked from back to front, when all the other parsing ran from front to back, and a bug in one of Visa's five Tandems, that output the first 10 bytes of the packet twice, if you nacked the first (correctly built) packet that it sent, possibly due to line noise. It took 7000 transactions to isolate the exact sequence of events. This was done using simulation software written especially for this job.

The bad packet looked like this:

<STX>first 9 bytes of data repeated<STX>real data<ETX><LRC>

The LRC routine started at the back, rather than the front, and stopped when it encountered an STX, so it passed the packet.

Then the parser then took what should have been the numeric date, (based on the position relative to the first STX), and ended up putting alpha information into a numeric only field, with disastrous results.

Had our LRC routine been written properly, we would have NAKed this packet



(bad LRC), and the bug in the Visa host would have been found and fixed MUCH earlier.

Granted it's not APRS, but there's lessons to be learned here.

--

Where's dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

---

## 22. [aprsspec] Re: Current software & the spec

From: "Woodrick, Ed" <[ewoodrick@ed-com.com](mailto:ewoodrick@ed-com.com)>  
Date: Sun, 10 Dec 2000 14:44:29 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-123955-2000.12.10-13.56.08--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-123955-2000.12.10-13.56.08--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

If "reject the wrong or questionable" was the way that your email client worked, then you probably would never get any email. As to Internet Standards, the motto is usually "accept anything"

The "accept anything" goes a lot further at allowing specifications to be expanded over time.

What is needed in situations like this is testing suites that can validate that a program is acting properly.

Ed Woodrick

-----Original Message-----

From: David VanHorn [<mailto:dvanhorn@cedar.net>]  
Posted At: Sunday, December 10, 2000 1:05 PM  
Posted To: Mail-Lists.APRS  
Conversation: [aprsspec] Re: Current software & the spec  
Subject: [aprsspec] Re: Current software & the spec

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--

Where's dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

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## 23. [aprsspec] Re: Current software & the spec

From: David VanHorn <dvanhorn@cedar.net>  
Date: Sun, 10 Dec 2000 15:08:51 -0500  
To: "APRS Spec Discussion List" <aprsspec@lists.tapir.org>  
Message-ID: <LYR11589-123958-2000.12.10-14.23.35--lyris.aprsspec#tapir.org@lists.tapir.org>  
Rendered body type: text/plain

At 02:44 PM 12/10/00 -0500, Woodrick, Ed wrote:

>

>If "reject the wrong or questionable" was the way that your email client  
>worked, then you probably would never get any email. As to Internet  
>Standards, the motto is usually "accept anything"

True, but the email client has a human to back it up. It's not going to go do things automatically based on the content (unless it's outlook express, automatically installing and running viruses :)

If the data is going to be acted on automatically, then we need to be sure that it's actually valid.

>The "accept anything" goes a lot further at allowing specifications to  
>be expanded over time.

You can always define "optional data" fields, and byte flags with openings for future definition.

>What is needed in situations like this is testing suites that can  
>validate that a program is acting properly.

We must have a PC programmer or two on this list who could write something like that.

When I was into this game, we had a language called "mimic", and I would write a routine that would send every possible valid packet, with several different sets of example data. In the example I gave, I wrote a terminal simulator that ran the transaction over and over, and simulated every sort of error I could think of, on a random basis. It trapped the host responses, and when the host said something illegal, I had the exact data that caused that output. Set it up, and let it rip.

In an APRS version, on the client end, you would see stations appear, move, send messages, weather, whatever else is doable. The tester would examine and interpret your output, and log anything it couldn't understand.

I would also send bad/malformed packets, both on a randomized basis (simulating noise hits) and specific bad packets that had triggered bugs previously (makes regression testing much simpler)

If I were a PC programmer, or still had access to Mimic, I'd volunteer to write this.

--  
Where's dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

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## 24. [aprsspec] Re: Current software & the spec

From: "Woodrick, Ed" <[ewoodrick@ed-com.com](mailto:ewoodrick@ed-com.com)>  
Date: Sun, 10 Dec 2000 17:33:08 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-123975-2000.12.10-16.44.48--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-123975-2000.12.10-16.44.48--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

David,

There's a lot of applications that automatically process Email messages.  
A lot.

But even without end-stations processing messages, all of the intermediary stations "automatically" process the messages.

Oh, let see if I can think of another "automatic" processor? Maybe this list itself?

And "optional fields" only work to a certain degree.

Ed

-----Original Message-----  
From: David VanHorn [<mailto:dvanhorn@cedar.net>]  
Posted At: Sunday, December 10, 2000 3:09 PM  
Posted To: Mail-Lists.APRS  
Conversation: [aprsspec] Re: Current software & the spec  
Subject: [aprsspec] Re: Current software & the spec

At 02:44 PM 12/10/00 -0500, Woodrick, Ed wrote:  
>

>If "reject the wrong or questionable" was the way that your email client  
>worked, then you probably would never get any email. As to Internet  
>Standards, the motto is usually "accept anything"

True, but the email client has a human to back it up. It's not going to go  
do things automatically based on the content (unless it's outlook express,  
automatically installing and running viruses :)

If the data is going to be acted on automatically, then we need to be sure  
that it's actually valid.

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

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## 25. [aprsspec] Re: Current software & the spec

From: David VanHorn <[dvanhorn@cedar.net](mailto:dvanhorn@cedar.net)>  
Date: Sun, 10 Dec 2000 19:52:45 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>

Message-ID: <LYR11589-123986-2000.12.10-19.07.31--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

>There's a lot of applications that automatically process Email messages.  
>A lot.

Depends to what degree you mean that..

>And "optional fields" only work to a certain degree.

Any protocol takes thought.. It's worked for visa and mastercard for about 20 years.

--

Where's dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

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Questions regarding the SIG go to the SIG administrator: wallou@tapr.org

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## 26. [aprsspec] Ack/Rej implementations...

From: Joel Maslak <jmaslak@antelope.net>

Date: Sun, 10 Dec 2000 19:51:24 -0700 (MST)

To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>

Message-ID: <LYR11589-123998-2000.12.10-21.01.12--lyris.aprsspec#tapr.org@lists.tapr.org>

Rendered body type: text/plain

I have a couple more APRS spec/implementation issues.

First: Neither WinAPRS, Xastir, or the HamHud seem to understand a rejection message. This contributes to excess QRM, as the rejection message gets ack'ed, and the original message will continue to be resent forever (or until the user kills it). So, it is better right now to ack ALL received messages - even in stand alone trackers - and then send a normal message stating that the site doesn't have an operator.

Second: We might want to rephrase the Multiple Acknowledgement section on page 72. It tells us that we should separate acknowledgements by 30 seconds and also transmit multiple acks on a long path -- both of which make a lot of sense. However, the first sentence is misleading:

"If a station receives a particular message more than once, it will respond with an acknowledgement for each instance of the message"... I have a home station within range of two wifes. If someone uses a path of WIDE, while they are also in range of my home station, it will send \*THREE\* acknowledgements. What makes it even worse is that the acknowledgements are sent out via the default path - WIDE3-3! Thus, I end up getting at least 4 acknowledgements, assuming the dupe checking on the digis works like it should (in reality, I get about 6). This is a fairly significant amount of QRM, if you ask me. The worst part is that this QRM goes through 200 miles of network - multiple times! The solution I propose (and implemented) is to SURPRESS duplicate acknowledgements for a period of 30 seconds after a message is acknowledged.

I guess this proves that we need an APRS test system. Unless someone else sends me an e-mail that they have already written one, I'll start writing one in Perl for the Linux OS. I foresee it having a scripted "standard" set of APRS tests and two modules: a generic APRS module and a TNC-specific module (I'll be implementing the TNC for the Alinco 135, since that is what I use in my car). It will connect via a serial port to an APRS application (yes, you will probably need two computers or a null-modem cable - however, it is hoped that at least the big radio companies might be able to secure the needed equipment for the test). However, don't expect me to have anything like this finished before two or three months from now!

--

Joel Maslak  
N7XUC

---

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## 27. [aprrspec] Re: Ack/Rej implementations...

From: David VanHorn <dvanhorn@cedar.net>  
Date: Mon, 11 Dec 2000 01:20:02 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-124036-2000.12.11-00.34.46--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I previously suggested implementing sequence numbers in the packets. Each packet from me has a sequence number, if you get the same sequence number, and the same callsign, then you know it's a dupe which does not need to be acked, without examining anything else.

Presumably you have space to keep a short list of recent packets, or just the source callsign and sequence numbers.

We ran into this problem in credit verification, when the terminals got the ability to send multiple transactions per session. If the host acks my first packet (an approve/decline response is interpreted as an ack), but the link trashes the ack to a nak (either explicit nak, or a trashed response packet), then I send the same packet again.. The host would get two packets, and think that they were two separate transactions, resulting in multiple charges. Sequence numbers solved that entirely.

You may still need multiple acks to make sure that one gets through, but at least you don't end up multiply acking all the dupes as well.

--

Where's dave? <http://www.findu.com/cgi-bin/find.cgi?kc6ete-9>

---

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---

## 28. [aprrspec] Who's who?

From: Roger Barker <roger@peaksys.co.uk>  
Date: Mon, 11 Dec 2000 08:53:05 +0000  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-124050-2000.12.11-03.05.44--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

For the benefit of those of us who are not members of the Working Group, I wonder if someone could post a list of the current members and say with what software product each of them is involved?

Also, I think it would help if others who post suggestions for changes to the spec, changes to the behaviour of existing software, etc, could also identify whether they are speaking as an active author of an APRS program, a would-be author, or just expressing an opinion as an APRS user.

(See my sig for my involvement with ham radio software.)

--

Roger Barker, G4IDE - roger@peaksys.co.uk  
For UI-View go to - <http://www.packetradio.org.uk>  
For WinPack go to - <http://www.peaksys.co.uk>

---

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## 29. [aprrspec] Re: Current software & the spec

From: Steve Dimse <sdimse@earthlink.net>  
Date: Tue, 12 Dec 2000 02:00:46 -0500  
To: "APRS Spec Discussion List" <aprrspec@lists.tapr.org>  
Message-ID: <LYR11589-124191-2000.12.12-01.13.38--lyris.aprrspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

On 12/10/00 12:34 PM Joel Maslak (jmaslak@antelope.net) wrote:

>I am writting a small tracker/display application, and came across a few  
>things which made me scratch my head. Simply put, there are some things  
>in the spec which are not implemented by even the most popular APRS  
>programs. There are other things which, while implemented, are

>implemented slightly different then the spec.

>

First, keep in mind the spec has been official for only a couple months. Second, since version 1 of the spec is supposed to describe what is implemented, any mainstream APRS application that deviates from the spec may well reflect an error in the spec rather than the program.

>Here's a short list of inconsistencies I've found:

- > 1) Some packets end with a CR. This is part of the actual packet, not a fault of my system! This is due to the SENDPAC character being a LF - when programs send a CRLF instead of just a LF, the CR becomes part of the packet. The spec indicates that the trailing CR should NOT exist.
- > 2) Other programs send BOTH a CR and LF! This is most common in "dumb" trackers. Chances are, it is a bug in the TNC firmware. Once again, this is outside the spec.

I just looked, and I could not find where the spec states the data can't end in cr,lf,crlf, or any other combination, can you point it out to me? In any case, it is certainly likely that errors like this will continue, and your program needs to be robust enough to handle it. Both of these problems exist within the tnc where no one on this list can do anything about it.

- > 3) The Course/Speed extension simply does not work in most software. I've actually tested WinAPRS, Findu, and Xastir, although I'm sure it doesn't work in most others, either. This extension is treated like part of the comment by these systems. Thus, the longer \$GPRMC string needs to be sent if this information is important to you.

Well, it works on findu, sometimes. On my recent trip I checked in frequently via WAP, and found about 25% of my posits had a course and speed. This is a bug I've known about for a while, and had looked briefly at the code to figure it out, but couldn't, so it got placed on the do list, where it presently resides at 87 of 139. Don't hold your breath! I've made it as clear as I can that findu is in a very early state of development, but it is not fully APRS compliant, never has claimed to be, and likely never will be. In all the time it has been up, no one every emailed me that there was a problem, and as long as that is the case, it will get buried deeped and deeper on the list...

It just came to light that the spec says it is OK to not have a trailing / after the course and speed, but since all the mainstream programs use one, it may be the source of the problems you note. Agains, since the spec is supposed to represent what exists, the correct action might be to add it to the spec, but that is up to the APRS WG, not you or I. You might want to repeat your test adding the slash and see what your results are.

- > 4) Compressed packets are not understood by many simple applications. This causes our bandwidth usage to increase.

> base 91 compression is 125 of 139 on the findu do list...

Steve

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### 30. [aprsspec] cassiopeia

From: "HarolSherrill" <w5hjs@home.com>  
Date: Wed, 13 Dec 2000 18:34:43 -0600  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-124447-2000.12.13-18.47.55--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

I Have a cassiopeia e 105 and cannot get aprs ce to work with it  
it seems like i cannot get the com port to see data from the radio..i am  
using the casio cradle as my seril port hookup to a d700 any ideas,  
settings?

W5HJS  
Harold Sherrill  
Grid EM40 WA

---

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### 31. [aprsspec] RE: cassiopeia

From: "Woodrick, Ed" <[ewoodrick@ed-com.com](mailto:ewoodrick@ed-com.com)>  
Date: Wed, 13 Dec 2000 20:17:01 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-124449-2000.12.13-19.28.47--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-124449-2000.12.13-19.28.47--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

Can you access the TNC using the built-in terminal program?

Are you using a null modem cable?

-----Original Message-----

From: HarolSherrill [<mailto:w5hjs@home.com>]  
Posted At: Wednesday, December 13, 2000 7:35 PM  
Posted To: Mail-Lists.APRS  
Conversation: [aprsspec] cassiopeia  
Subject: [aprsspec] cassiopeia

I Have a cassiopeia e 105 and cannot get aprs ce to work with it  
it seems like i cannot get the com port to see data from the radio..i am  
using the casio cradle as my seril port hookup to a d700 any ideas,  
settings?  
W5HJS  
Harold Sherrill  
Grid EM40 WA

---

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Questions regarding the SIG go to the SIG administrator: [wallou@tapr.org](mailto:wallou@tapr.org)

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### 32. [aprsspec] Network Functions

From: "Ev Tupis (W2EV)" <[propnet@greeceny.com](mailto:propnet@greeceny.com)>  
Date: Fri, 15 Dec 2000 07:37:10 -0500  
To: "APRS Spec Discussion List" <[aprsspec@lists.tapr.org](mailto:aprsspec@lists.tapr.org)>  
Message-ID: <[LYR11589-124710-2000.12.15-06.46.14--lyris.aprsspec#tapr.org@lists.tapr.org](mailto:LYR11589-124710-2000.12.15-06.46.14--lyris.aprsspec#tapr.org@lists.tapr.org)>  
Rendered body type: text/plain

I'm brainstorming on another project and could use some  
insights from any who feel that they'd like to provide  
input...

In the APRS world, what are the various types of network  
functions (RF Only at this point, please) that are present?

| Function    | Invoked by these aliases                      |
|-------------|-----------------------------------------------|
| Digipeating | WIDE, RELAY, TRACE, WIDEN-N, TRACEN-N, mycall |
| Gateway     | GATE, IGATE                                   |

Any others come to mind?

Ev, W2EV

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### 33. [aprsspec] RE: cassiopeia

From: Carl Littlejohns <carl\_mail@dr.com>  
Date: Thu, 14 Dec 2000 07:54:50 GMT  
To: "APRS Spec Discussion List" <aprsspec@lists.tapr.org>  
Message-ID: <LYR11589-124832-2000.12.15-20.23.19--lyris.aprsspec#tapr.org@lists.tapr.org>  
Rendered body type: text/plain

If the E105 is the same as the E115 (and the look the same :) ) then the  
PC comms link automatically grabs the com port when you plug something in. On  
mine I have to click

programs|settings|connections|pc| and then uncheck the 'automatically  
synchronise' box.

Its a PITA achully :)

APRS/CE is nice tho - and the latest beta version handles all DosAPRS maps  
very well.

There is a list group for APRS/CE and all other ham related use of the  
pocketPc on www.egroups.com called hampocket - has about 25-30 members when I last  
looked so its not high-bandwidth :)

send an email to [hampocket-subscribe@egroups.com](mailto:hampocket-subscribe@egroups.com)

I think will subscribe you, or else you can to surf there.

I have yet to get mine to work with a v5 ROM TINY-2, but it is very happy  
with the kenwood THD7E

Carl GW0TQM  
<http://www.findu.com/cgi-bin/find.cgi?gw0tqm-7>

> I Have a cassiopeia e 105 and cannot get aprs ce to work with it  
> it seems like i cannot get the com port to see data from the radio..i am  
> using the casio cradle as my seril port hookup to a d700 any ideas,  
> settings?  
> W5HJS  
> Harold Sherrill  
> Grid EM40 WA

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